

MONTHLY

JULY, 1927

No. 258

HITCHCOCK'S MACHINE TOOL BLUE BOOK

DIRECT MAIL ADVERTISING

to

*Industrial Machine Shops
Automotive Plants
Railway Mechanical and
Purchasing Departments*

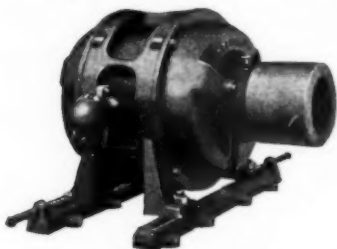
**AND ALL OTHER
MACHINE TOOL
USERS**

**Controlled Circulation
25,000 Monthly**

Published By

**HITCHCOCK PUBLISHING CO.
508 So. DEARBORN ST.
CHICAGO**

Buy this motor~ *and junk the OIL CAN!*



The oil can and its contents, though essential to the ordinary motor, are two of its worst enemies. Too much oil carelessly directed causes oil-soaked windings and costly breakdowns.

With Reliance Ball-bearing Motors on the job you can cut out the danger and cut down the cost at the same time. In place of frequent oil squirting apply a little grease once a year. The grease is easily put where it belongs and can be kept there. Breakdowns due to oil-soaked windings are at an end.

The Reliance ball-bearing motor construction is backed by 21 years of experience in applying anti-friction bearings to electric motors.

Reliance Electric & Engineering Co.
1050 Ivanhoe Road, Cleveland, Ohio

Branches:

Boston
Cincinnati

New York
Detroit

Buffalo

Philadelphia
Chicago

Pittsburgh
Birmingham

RELIANCE ^{AC} MOTORS

with Ball ^{DC} Bearings

Direct-by-Mail Advertising

The Blue Book is co-operative direct-by-mail advertising, with all the efficiency and economy of co-operative effort.

Its monthly distribution of 25,000 copies covers all the better class of users and buyers of machine tools and shop equipment as completely as we have found it humanly possible.

When you are planning a direct-by-mail campaign, why not do it in co-operation with others, through the pages of the Blue Book, more effectively, more economically, and with far less effort?

Figure the amount of money you expect to put into a direct-by-mail campaign. If it will pay for only a half page in the Blue Book, that is good. If it will pay for a full page, or even a couple of pages, that is better.

But if your appropriation for direct-by-mail advertising will cover, say, four, or six, or eight, or a dozen pages in the Blue Book—sufficient to attract special attention and to tell your whole story—you can make your name and products familiar to potential buyers from coast to coast in 30 to 90 days.

This service—this great service—this most unusual service—is ready and waiting for you.

Won't you at least discuss it with us?

HITCHCOCK PUBLISHING CO.

508 So. Dearborn Street
CHICAGO, ILL.

Sensitive Drilling

Of greater range
and larger output

At 2,000 R. P. M.



American
Maxi-Speed
Sensitive
Radial

With Adjustable
Speed Simplified
Motor Drive for
Direct Current

Reduced costs must come from the installation of modern production tools. Standing at the head of sensitive drilling machines is the American Maxi-Speed Radial.

It's the fastest and most powerful machine of its kind ever built, combining the range of the radial with the speed of the sensitive. It drills and taps holes up to 1 in. diameter faster, cheaper and better than ever done before. Furnished also with a. c. motor and belt drives.

Will you investigate? We're at your service

The American Tool Works Company

Cincinnati, Ohio, U. S. A.

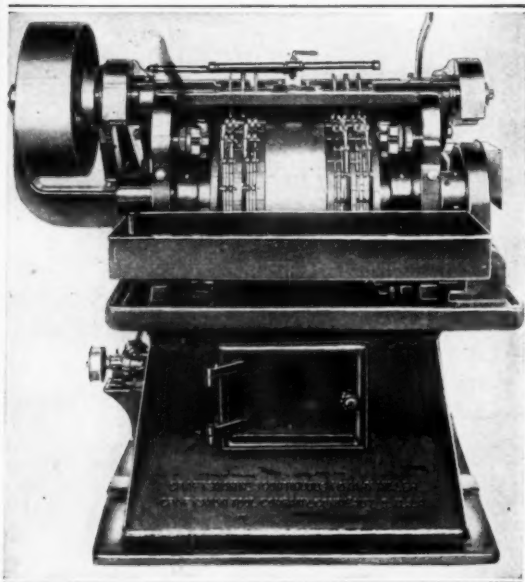
LATHES

RADIALS

SHAPERS

The Craftsman Continuous Rotary Miller

Made in Three Sizes—No. 1, No. 2 and No. 3

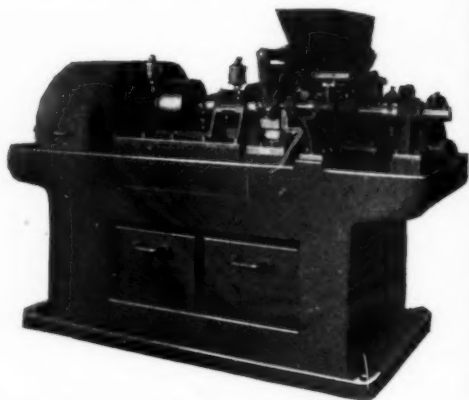


**For Castellating—Screw Slotting—Slab Milling
Straddle Milling—Plain Milling, Etc.**

Let us have your blue-prints or samples of small parts to be milled, and we will be pleased to submit production rates.

Manufactured by

The Sommer & Adams Company
18511 Euclid Ave., Cleveland, Ohio

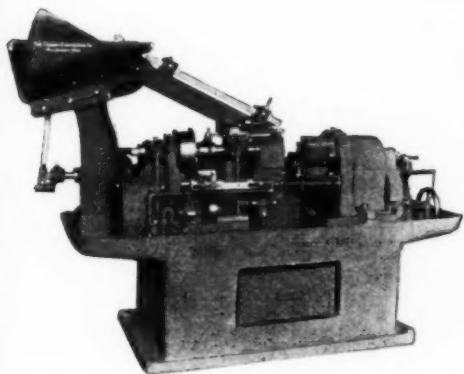


Bushing Manufacturers *Attention!*

ANNOUNCING
a new line of Automatic
Bushing Finishing Machines.

Write for particulars

THE ECONOMY ENGINEERING CO



“This is Production”

**2800 Pointed and Threaded
1/2" Bolts Per Hour—
One Operator!**

WHEN USING

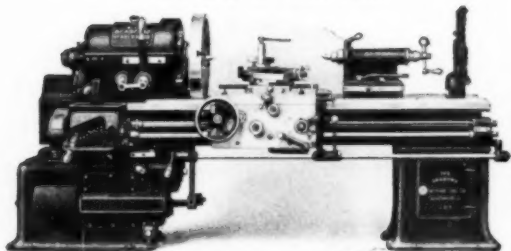
**Four Economy Automatic Combined
Pointing and Threading Machines.**

**Capacity 3/16"x1" to 1"x5 1/2"
Bolt and Cap Screws.**

G COMPANY, - Willoughby, Ohio

BRADFORD All-Geared Lathes

Built Throughout Along New Lines
And they are BETTER



18" Single Pulley or Motor Drive, with Apron Control

They combine enormous driving power with smooth running in such a way that they take the heaviest cuts with ease or the final thousandth with great precision.

They are newly designed throughout to do *better work and more of it*. We invite comparison and competitive tests, and shall be glad to submit facts to your own mechanical engineer for decision.

Special Machines

If your requirements are outside of our regular line, send us blueprints for estimate of output on machines built specially for the job.

Write for our "All-Geared" Lathe Bulletin, and let us know your needs in Engine, Precision or Turret Lathes, or let us design a machine for your special work.

The Bradford Machine Tool Co.

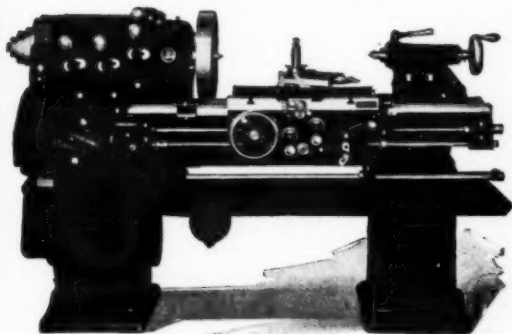
Builders of Quality Lathes from 14 to 48 inches

Cincinnati, Ohio, U. S. A.

Established 1840

Monarch Ball Bearing Helical Geared Head Lathe

Is giving wonderful service



About 90% of our orders are for Helical Geared Head Lathes, and about three-fourths of those are re-orders.

That means that Monarch Helical Geared Head Lathes are giving wonderful service. It means that if you once used them, you also would order again as you need new lathes.

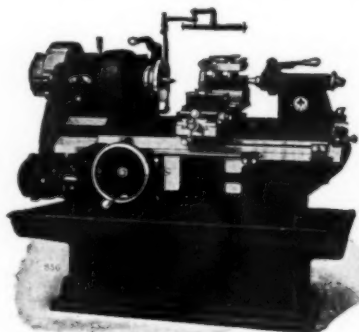
WHY? Because they are noiseless, smooth running and powerful. Because they have developed spindle speeds never before obtained in geared head lathes. Because they increase production and do better work. Because of their many features for quick and easy manipulation. Because of their ultra-modern design and construction throughout.

Made 14" to 30". May we tell you about them?

The Monarch Machine Tool Co.

Sidney, Ohio, U. S. A.

The LeBLOND Multi-Cut Lathe



LeBlond No. 9 Multi-Cut Lathe

The Multi-Cut is a semi-automatic lathe adapted to combined turning and facing cuts using multiple tools. The set-up is very simple and quickly accomplished, there being no cams to consider. The machine can therefore be used profitably on relatively small lots.

*Our complete catalog describes the several sizes in detail.
We will gladly send it to interested parties.*

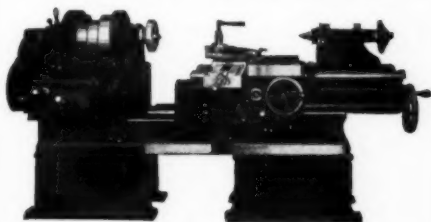
**THE R. K. LeBLOND MACHINE
TOOL COMPANY**

CINCINNATI,

OHIO

Rahn-Larmon 18"/36"
Extension Bed Gap Lathe

Also Made in Sizes 22"/40" and 28"/50"



**The Ideal Lathe for Rail-
road and Jobbing Shops**

Here is a lathe of the widest range, yet so sturdy in construction that it absorbs the vibrations of the heaviest cuts.

There is hardly a reasonable limit to the work it will do. It is always ready for practically any job, without tearing down or setting up.

It saves in investment cost, it saves in time and labor cost, and it increases output—a most unusual combination. And it enables the operator to have at all times a lathe ready for most any job that comes into the shop.

Get in touch with us. Find out what this lathe will do for you and how it saves costs. Glad to go into the matter with you fully, without obligating you in any way.

The Rahn-Larmon Co.
CINCINNATI, OHIO

Drill

**Get this book
before you do your
1927 tooling**

—if not already using Avey Drilling Machines

Among the 20 sizes and types of Avey Drilling Machines you will find just the machine you want. Each is supreme in its class, backed by our absolute guarantee.

All-ball-bearing, automatic, semi-automatic or hand-operated—1 to 6 spindles—there's an Avey for every class of work and size of hole.

**The Avey Drilling Machine Co.
Cincinnati, Ohio**

FOOTBURT



A Single Spindle Footburt Sipp Sensitive Drill

**Made in three
sizes of single
and multiple
spindle models**

More holes with this machine

Why? Because you can change speeds in two seconds or belts in ten seconds—because the automatic idlers keep the belt pulling to capacity at all times—because the full ball bearing equipment and accurate machining gives a smooth, fast cut.

Write for No. 650 Folders

The Foote-Burt Company, Cleveland, O.

FOOTBURT

Demco

Drills

Increased Production

can only be secured from machines that have been especially designed to give continuous, reliable service. These machines must have wearing parts that require practically no attention.

In sensitive drilling machines the spindle is the part where the greatest wear occurs.

Demco Drilling Machines

have the only spindles on the market that absorb their own wear.

Demco Spindles have no lost motion.

Demco Spindles require no adjustments.

*For sale by
machinery dealers in
all principal cities*



Model—DH, Single Spindle Floor Type.

DEMCO DRILLS—Cleveland, O.

Division of

Merit Oil Equipment Co., Cleveland, O.

Modernized Edlund Drills



Display the newest developments in the industry's oldest tool.

Efficiency, long service, and the absence of trouble making features characterize these drills.

In them skilled design and the best of materials have been combined with such advanced features as—

A motor bolted to back plate in such a manner that all pull is removed from motor shafts;

Spindle and cone pulley so balanced that extreme sensitiveness is assured and vibration is obviated;

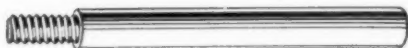
Speed adjustment made without stopping motor;

Trips with such accuracy that any number of blind holes may be bored with less than .004" variation.

Edlund Production Drills are furnished with belt or motor drive—single or multiple spindle—with or without power feed. Production executives find them highly satisfactory in the quantity and quality of their output under hard, continuous use.

Write for circulars; they give full mechanical details.

Edlund Machinery Co., Inc.
Cortland, N. Y., U. S. A.



Threading at 3000 R. P. M.

These rods are being threaded with a No. 8-32 thread 5-16" long, at an average production of 1400 pieces per hour on our Standard High Speed Tapping Machine.



*How about your
threaded work?*

Leland-Gifford Company, - Worcester, Mass., U.S.A.

BRANCHES

BOSTON CHICAGO CLEVELAND
DETROIT NEW YORK
PITTSBURGH ROCHESTER

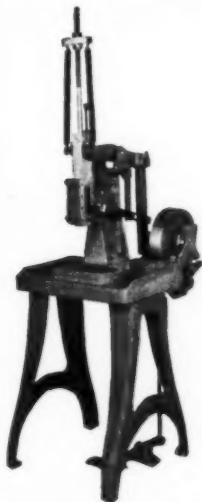
AGENTS

Hendrie & Bolthoff
F. E. Satterlee Company
Colcord-Wright Mch. & Supply Co.
Herberts Machinery & Supply Co.
F. F. Barber Machinery Co.

Denver
Minneapolis
St. Louis
Los Angeles
San Francisco
Toronto

LELAND - GIFFORD

**Taylor & Fenn Belt Driven
No. 12 Spring Press**



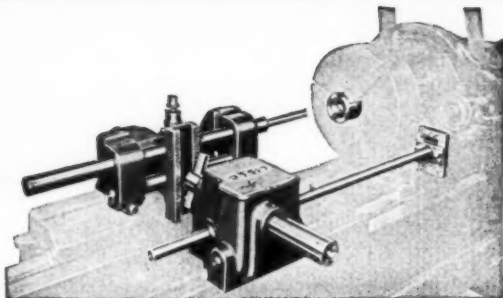
**UNIFORM BLOW
SPRING PRESSES**

**Are made in
three sizes,
with either
single or
double action**

Our No. 12 Belt Driven Spring Press, illustrated above, has a stroke of $3\frac{1}{4}$ inches. The foot treadle operates a safety clutch attached to the flywheel, which automatically stops the machine after each stroke regardless of whether the treadle is released or held down by the operator. The clutch can be adjusted for a continuous stroke if desired.

Descriptive circular gladly sent upon request

The Taylor & Fenn Co.
Hartford, Conn., U. S. A.



....oil-groove bearings like these—*four a minute!*



The Cisco Oil Grooving attachment is handily attachable to any lathe 16 to 20 inches inclusive; cuts a single or double oil groove of figure eight type inside or outside the bearing, the style and depth of groove being readily changeable by the operator.

Effective and efficient on small or large quantity production. The range of the regular machine is 6 inches in stroke length, but this can be lengthened depending upon the size machine mounted on. The diameter of the work to be oil grooved, is not controlled by the attachment, but by the size of the machine and chuck used.

The time required for putting an oil groove in a brass bush 2 inches long and 2 inches in diameter, in and out of the machine, is about four pieces per minute.

This is the most convenient and economical device available for oil grooving. It is a time-saver and money-maker wherever installed. Write for bulletin and prices.

The Cisco Machine Tool Co.
1700 Elmore Street, Cincinnati, Ohio

Increase Production by Lessening "Air Cutting Time"



with the **Kent Fully Automatic Stud Threader**

BY reducing idle time, the Kent Automatic Stud Threader will greatly increase your present production and introduce new economies.

The cam shaft, which controls gripping, threading and ejecting of the stud, is so closely timed and the operations follow each other in such rapid succession that most of the "air cutting" time required by other methods of threading, is saved.

Simply keep the magazine filled and production goes on unceasingly. One man looks after a battery of machines, giving quantity production at low cost.

Send for Bulletins describing the machine in detail



Threaders—Slotters—
Drillers—
Bar Pointers—

*A Symbol of Quality
on Any Machine*

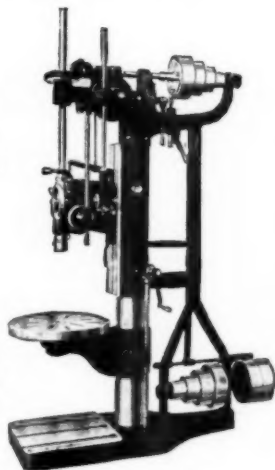
Cap Screw Pointers
and Shavers—Tappers—
Tool Grinders.

The KENT MACHINE COMPANY
KENT, OHIO

BARNES DRILLS

With
Stationary
Head, from
8 to 25-inch
swing

With
Sliding
Head, from
22 to 50-inch
swing

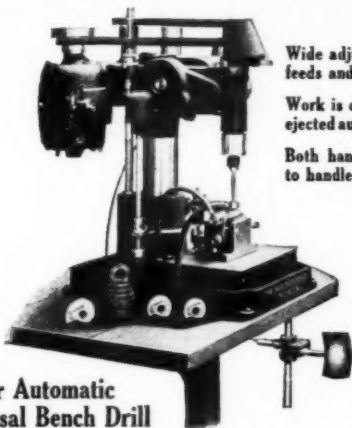


Write for full information

Established 1872

W. F. and John Barnes Co.
Rockford, Illinois

For Large Production Drilling In Small Parts of Varied Shapes



Wide adjustability of feeds and speeds.

Work is clamped and ejected automatically.

Both hands left free to handle work.

Stecher Automatic Universal Bench Drill

The number of holes that can be drilled in a given time on the "Stecher Automatic" is limited only by the capacity of the drill.

The wide adjustability of speeds and feeds; the automatic clamping, releasing and ejection of work; the control of feed by a slight knee pressure, leaving both hands free to handle work—these are some of the features that make the "Stecher" such *a remarkable producer at bed-rock cost.*

The mere pulling of a lever changes the "Stecher" from an automatic production tool with power feed into a high speed drill press with sensitive hand feed. We can also furnish dial, rotary or magazine feeds to suit conditions.

*Write for folder, which gives the complete description
Also send us samples of your small parts to be drilled*

The Chas. Stecher Co., 2452 N. Greenview Ave.,
CHICAGO, ILLINOIS

Cutter and Tool Grinders

For All Classes of Work

No. 12
Cutter and Tool
Grinder



The Nos. 10, 11 and 12 give a range of sizes that will take care of any kind of cutter and tool work as well as light cylindrical grinding.

Let us recommend the proper sizes for your work

LANDIS TOOL COMPANY

Waynesboro, Pa.

New York Office: 2907 Singer Bldg. Detroit Office: 5928 Second Blvd.

Chicago Office: 618 W. Washington Blvd.

The "Hole" Question And Sharp Drills



**Motor
Driven**

**Capacity
No. 52
to $\frac{3}{4}$ "
Drills**

Style A-7-T Grand Rapids Drill Grinder

The Drill Grinder illustrated above is of the bench type, but can be furnished with floor column. It may be operated from a lighting circuit.

Like all Grand Rapids Drill Grinders, it is scientifically designed to both *sharpen* and *shape* the cutting edges in a way that insures the cutting capacity of which the drills are capable.

Given any particular drilling outfit, and if the drills are sharpened on a Grand Rapids Drill Grinder they can be counted on to do their part in producing the maximum amount of accurate work.

Write for the Drill Grinder Book

It tells the "how" and "why" of it

Gallmeyer & Livingston Co.

342 Straight Ave., S. W., Grand Rapids, Mich.

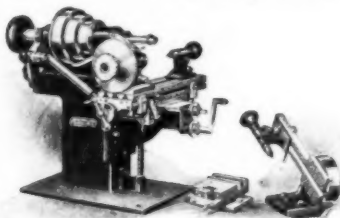
Manufacturers of Grand Rapids Drill Grinders, Cutter and Tool Grinders and Tap Grinders. What do you need?

HARDINGE

Cataract Better Work

Bench Miller

Speed Accuracy Adaptability

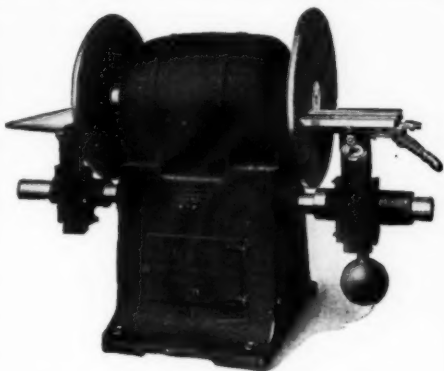


Many years of practical experience and designing has brought forth a miller which fulfills the demands of our day—speed, accuracy and adaptability.

Our *Cataract Bench Miller* has a wide range of feeds. It has independent steel indexes graduated to read to thousandths of an inch, and is equally well adapted for the lighter tool-room, mixed or production work.

*Complete data and interesting price
gladly sent on request*

Hardinge Brothers Inc.
4149 Ravenswood Ave.
Chicago, Ill.



*For economical grinding
of flat surfaces—*

GARDNER DISC GRINDERS!

46 standard sizes and types, and an
endless number of special machines
—for an unlimited variety of work.

SEND FOR CATALOG!

GARDNER MACHINE COMPANY

Near Wheeler Ave.,

Beloit, Wis., U. S. A.



New Type Machine For Rotary Filing Grinding and Polishing

Type RF-M 4. 1/4 H. P.



For
Die Makers
And
**All Kinds of
Metal Finishing**

Of
**Various Shapes
and Sizes**

A Machine—

For
Many Purposes

**Attach to the
Lighting Circuit**

Attachments



EQUIPMENT

**Ball Bearing Hand Piece.
8 Assorted Rotary Files.
9 Assorted Grinding Wheels.
1 Rubber Polishing Drum.**

Machine Complete as Illustrated

N. A. STRAND & CO.

Manufacturers

**5001 No. Lincoln Street
CHICAGO**

COMBINATION GRINDING AND POLISHING MACHINE

A heavy-duty combination grinding and polishing machine recently placed on the market by the Standard Electrical Tool Co., 1948 W. 8th St., Cincinnati, O., is shown in the accompanying illustration. This



**Grinding and Polishing Machine Built by the
Standard Electrical Tool Co.**

machine is built in two sizes, of three- and five-horse-power capacity, respectively. The machine is motor-driven, and is fitted with push-button control. The bearings are encased in dustproof chambers. The armature shaft is made of nickel steel. A device is provided for locking the shaft when changing wheels.

In addition to grinding and buffing wheels, wire wheels or scratch brush wheels can be employed on the machine.

PEERLESS SURFACING MACHINES

for
**Grinding and Finishing
Flat Work**

**4' Bench
Model**

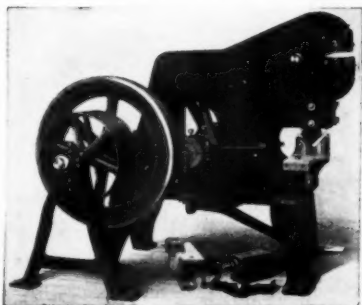


**Larger Machines in Both
Horizontal and Vertical Styles**

SEND FOR FOLDER

PEERLESS SURFACING MACHINE CO., Inc.
TROY, N. Y.

Punches—Shears—Bending Rolls
The Beloit
Combined Power Punch and Shear



Built in seven sizes. Nos. 51, 52, 53, 54, 55, 55½ and 56

Direct connected motor or belt drive

This is the best all around punch and shear in a combined machine of moderate cost. It is heavy and substantial, and amply back geared to require the minimum amount of power; is strong, compact, and easy to operate. Can be equipped with angle shearing attachment, architectural jaw, or for special work.

We make a complete line of punching and shearing machinery in both power and hand tools, also light and heavy duty bending rolls.

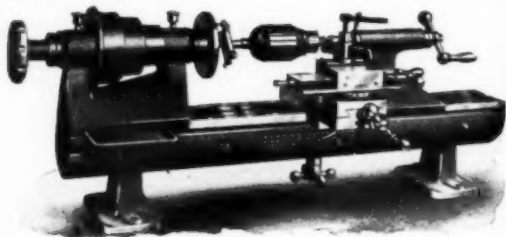
We do not overrate the capacity of our machines.

Write for catalog and prices.

Hendley & Whittemore Co.
100 S. State St., Beloit, Wis.

**SLOAN
and
CHACE**

Precision Tools



No. 6 Precision Bench Lathe

Furnished for either Countershaft or Motor Drive

The accuracy and easy running qualities that have distinguished Sloan & Chace Bench Lathes for years are built into this new and heavier machine.

The No. 6 combines the accuracy and close adjustability of a precision tool with the strength and rigidity of a production machine.

An Important Consideration

With its 10-inch swing, 38-inch bed and 1¼-inch spindle capacity, the No. 6 is equal in range to a floor lathe. Yet because it is a bench lathe it occupies less space and sells at a more reasonable price.

Our handsomely illustrated catalog will be sent on request

Sloan & Chace, Inc.

361 Sixth Avenue,

Newark, N. J.



Reduce Your Costs

Of Light Shaping and Slotting

7 in.
Shaper
Stroke



3½ in.
Slotter
Stroke

The Rhodes Shaper and Slotter

Probably the greater part of your shaping and slotting falls within the dimensions of this specialized machine. If you are now putting such work through heavy, high-cost machines, then the "Rhodes" will save you money.

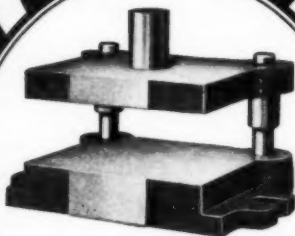
In the construction of the "Rhodes" we have spared no pains to make it the equal of any of the larger, higher-cost machines in materials used, workmanship and performance. It will pay you to investigate the "Rhodes" and learn how economically it will serve you.

*Ask your dealer or write for
CATALOG H22*

The Rhodes Mfg. Company

944 Park Road, :- Hartford, Conn.

SHAPERS—RHODES—SLOTTERS



Danly Die Sets

**Completely assembled or
in the "knockdown"**

Big savings always follow the adoption of Danly Standard Die Sets. The experience of nearly 4000 makers of stampings prove that.

Send for our 54-page catalog

Danly Machine Specialties, Inc.

2116 So. 52nd Avenue, Chicago, Ill.

Detroit
Mich.

Long Island City
N. Y.

DANLY
STANDARD

Etchograph

Trade Mark

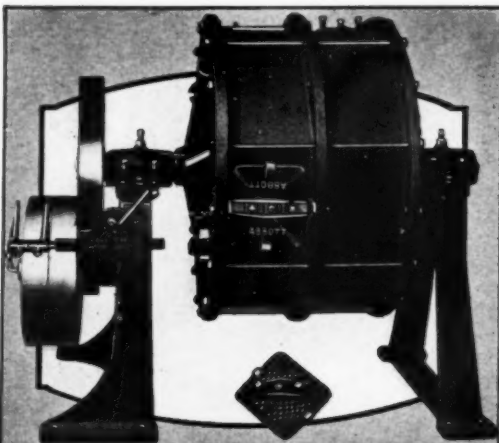


Patented July 8, 1918
Patent No. 1,309,160

The original Etchograph, for writing or marking on steel, iron or steelite—any style or size of letters, figures or design—in *one-fifth the time* required by old methods. No acid, fuss or trouble—simply connect with light socket, and write as with a pencil.

*Write for illustrated descriptive booklet and
mention power available*

William Brewster Company
50 Church St., New York



Is your finishing operation
"The Neck of the Bottle?"

Does finishing slow up production in your plant? It need not, because the Abbott Method of Ball Burnishing for finishing metal parts enables your finishing department to keep pace with every other operation.

Exceptionally fine finish, high output and low cost are some of the advantages of the Abbott Finishing Method. Let us tell you all about it—send us some samples if you are unfamiliar with the finish produced—we will return them finished with a complete report.

THE ABBOTT BALL COMPANY

"Originators of Commercial Ball Burnishing"
1043 New Britain Ave., Hartford, Conn.

MARTINDALE Electric Etcher



For marking gauges, dies, gears, saws, tools, drills, shafting and all other articles made of iron or steel. It is much quicker and more satisfactory than the old paraffine and acid method. Writes like a pencil and burns the letters in the steel, making a permanent and legible record. **Price \$50.00 complete.**

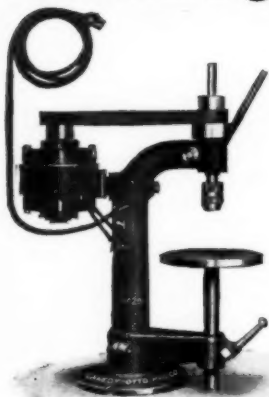


MARTINDALE ELECTRIC CO.

1264 West 4th St., Cleveland, Ohio

Please send bulletin on Etcher to

Eliminating Vibration



Canedy-Otto

Sensitive Bench

Drill No. 29

Drills to a 10" center.

Capacity $\frac{3}{8}$ " diameter.

Run of spindle $2\frac{1}{2}$ ".

Run of table 7".

110 V.—60 Cy.—1 Phase

1100—2200 R. P. M.

\$44.00

Ready for the Job

Comes complete with Toggle Switch, Cord, Socket, Belt and Chuck

The vertical type ball bearing motor with which the Canedy-Otto No. 29 is equipped is attached in such a manner that the proper tension is constantly exerted on the belt, preventing loss of power. This design eliminates the use of gears and operates at high speed without noise or vibration.

All parts are accurately machined and balanced for high speed work. The spindle is so ground and fitted with ball thrust bearing and chuck that true running is insured.

Canedy-Otto Manufacturing Company

Main Offices and Factory—Chicago Heights, Illinois

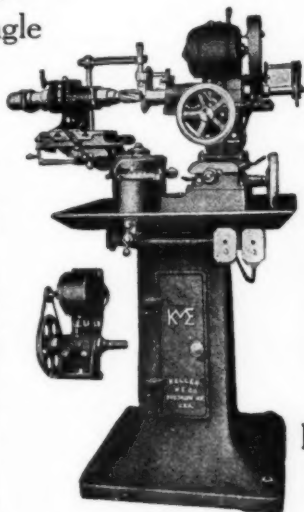
New York Branch
407 Broome St.

*Complete stock
carried at branches*

San Francisco Branch
955 Folsom St.

Tooth and radius
ground at **one setting**—

any taper—
any angle



KELLER
R-6

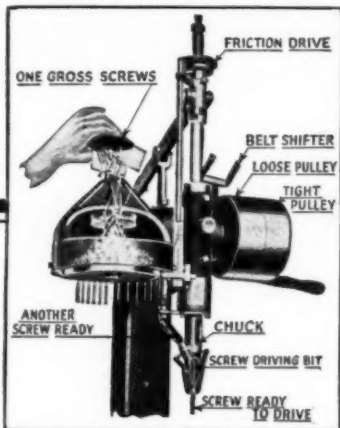
UNIVERSAL RADIUS and CUTTER GRINDER

Send for descriptive folder

KELLER MECHANICAL CORP.
ENGINEERING
58A WASHINGTON ST., BROOKLYN, N.Y.

(See pages 56 & 61)

Do you know your Screw Driving Costs?



Showing Magazine Feed of the Reynolds Automatic

You may know your annual cost of driving screws.

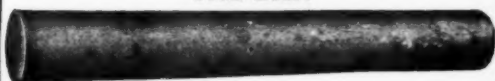
If not, we suggest that you get at least approximate figures, which may run up into more money than you imagine.

65% to 85% of that sum, whatever it may be, can be saved by using the Reynolds Automatic Screw Driving Machine, with Magazine Feed.

Write us today the length and gauge of screws used, with dimensions over all of your work, and let's see if we cannot find a way to save you considerable money. No obligation incurred by writing.

The Reynolds Machine Company
Dept. H. H., Massillon, Ohio

THE BAR



First
Process



Finished "AmForging." Note by cross section how little material must be machined away.

100% PRODUCT!

**No Flash! No Tong-hold!
No Draft! No Holes to Bore!**

NO WASTE AT ALL!

Our customer benefited greatly by this amazing forging record. Our engineering department is at your service. Where we have helped others—we can help you.

Send for our descriptive booklet

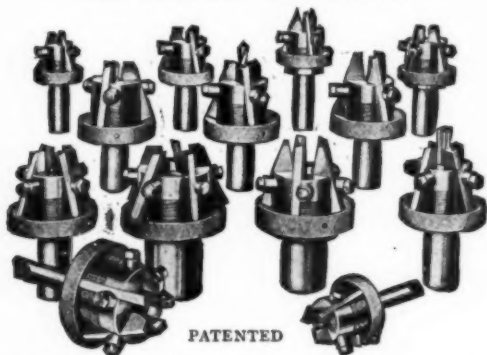
American Forge Co.

2635 So. Hoyne Ave.,

Chicago, Ill.

A Saving Hint for You

"Use Genesee Hollow Mills!"



THEY SAVE—Because the seven sizes cover the entire range from $\frac{1}{8}$ " to 2", which ordinarily requires hundreds of solid tools;—because one set of blades outlasts three to five solid tools, and can then be replaced at small cost.

THEY SAVE— Because they are ideal for finishing castings, forgings, etc., and more economical than non-adjustable mills for every purpose. Genesees cut up to 15" a minute in steel. They are stronger than solid tools, and as they cannot change in size, they are thoroughly dependable.

NOW MADE in six different styles, from the heavy roughing Style "B" to the accurate finishing Style "F." We also make Style "N" Mills for all Brown & Sharpe automatics, and special size and style to your order. You will find them all real cost reducers.

Equip your shop right—write us about your needs

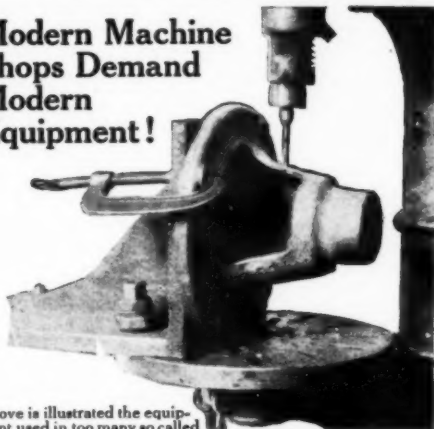
Genesee Manufacturing Co., Inc.

141 North Water Street, Rochester, N. Y.

Manufacturers of Genesee Rapid Production Tools.

Est. 1908

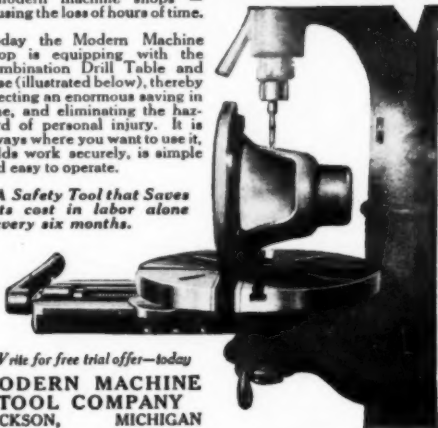
Modern Machine Shops Demand Modern Equipment!



Above is illustrated the equipment used in too many so called "modern machine shops"—causing the loss of hours of time.

Today the Modern Machine Shop is equipping with the Combination Drill Table and Vise (illustrated below), thereby effecting an enormous saving in time, and eliminating the hazard of personal injury. It is always where you want to use it, holds work securely, is simple and easy to operate.

A Safety Tool that Saves its cost in labor alone every six months.



Write for free trial offer—today

**MODERN MACHINE
TOOL COMPANY
JACKSON, MICHIGAN**



They are usually known among mechanics as lathe mandrels, but they work equally as well on millers or grinders. They also will take a job with a square hole as well as a round one.

Write us for further information.

W. H. Nicholson & Co., 117 Oregon St., Wilkes-Barre, Pa.

Champion Tool Holders **SAVE** **Expensive Tool Steel**



Patented

CHAMPION
Tool Holders are made of drop-forged steel, thoroughly case-hardened, and are equipped with an unbreakable "Mac-it" set screw.



Patented

Champion Boring Tool

This tool is indispensable for inside threading and boring. Takes any length of cutter, which may be used down to short lengths. Cutters, drills, reamers, taps and many other tools can be used in this Holder.

Let us tell you more about our Turning Tools, Boring Tools, Planer Tools, Cutting-Off Tools, Threading Tools, Grooving Tools and the Champion Drill Holder.

Write for New Catalog and Price List

The Western Tool & Mfg. Co.
Springfield, Ohio

SAVING FINE TOOTH SAWS WITH TEETH UP TO 32 TO 1" PAYS

SEND TO US

By mail two saws and we will
resharpen them

FREE OF CHARGE

that you may see the work our
machines do.

IT To Sharpen

COSTS a Saw on

5c one of our
Machines

THAT'S WHY—

American Brass.....	have 19
American Hard Rubber.....	have 10
Continental Fibre.....	have 23
Formica Insulation.....	have 10
Fisher Body Corp.....	have 40
General Electric.....	have 38
Simons Saw & Steel.....	have 24

Makers of automatic machines for sharpening—Hack Saws, Hard Tempered Band Saws,
Milling, Slitting and Screw Slotting Saws and all Woodworking Saws

THE WARDWELL MFG. CO.

Manufacturers of the largest line of Saw Filers made in U. S. A.

108 Hamilton Ave.,

CLEVELAND, OHIO

No. 5 Jr. Punch



Capacity $\frac{1}{4}$ -inch through 16 gauge

Weight.....	2½ lbs.
Punch in center of.....	3 inches
Length over all.....	8½ inches
Height of Gap.....	$\frac{1}{4}$ -inch

No. 7 Roller Bearing Punch



Capacity $\frac{1}{4}$ -inch through $\frac{1}{8}$ -inch.

Weight.....	6½ lbs.
Punch in center of.....	3½ inches
Length over all.....	18 inches
Height of gap.....	$\frac{1}{2}$ -inch

Imperial Punch No. 8



Capacity $\frac{1}{4}$ -inch through $\frac{1}{8}$ -inch.

Punch in center of.....	4¼ inches
Length over all.....	25½ inches
Weight.....	16 lbs.
Height of gap.....	$\frac{1}{2}$ -inch

Write for Catalog of entire line

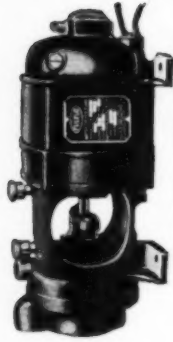
WHITNEY METAL TOOL CO.
95 Forbes St., Rockford, Illinois



GRINDER PUMP



VOLUME PUMPS



MOTOR DRIVEN UNITS
1/2 to 5 H. P. 5 to 75 G. P. M.

46

FULFLO delivers coolant in volumes which promotes efficiency in cutting tools.

The full, copious flow from the Fulflo is needed to make the best tool, with the best coolant, most effective.

FULFLO does not clog, therefore it always

works. It's the trouble proof pump.

No machines stopped to unclog pump. All the chips you can get into it pass through without harm.

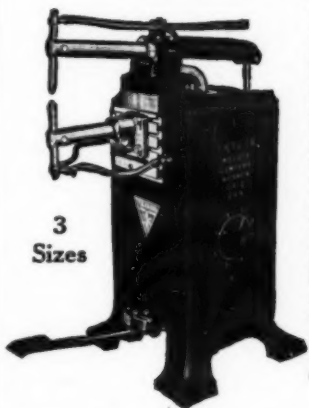
FULFLO has longest life because its only pumping part does not wear.

MANUFACTURED BY

FULFLO SPECIALTIES CO., BLANCHESTER, OHIO



Ready for Heavy Duty Day After Day



3
Sizes

The "N" Series Taylor Welder is built to give service—unending, uninterrupted, dependable and economical service! It knows no word as "quit" unless you wish to have it do so. The Taylor "N" has countless features that render super-service at the lowest cost and insure maximum twenty-four hour production with minimum labor, effort and upkeep!

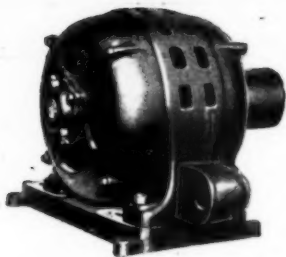
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THE TAYLOR WELDER COMPANY
WARREN, OHIO, U. S. A.

There are
none better
than—

Type
"N"

TAYLOR SPOT WELDERS



Performance

The motor you install—will it measure up to its responsibility? Are you willing to take for granted the dependability of an ordinary motor? Or—do you follow the safer policy and demand the extra assurance you get only with a quality-built motor?

An increasing number of machine tool manufacturers, who are conscious of the *better* motor's influence on machine tool performance, are now standardizing on F-M *Ball-bearing* Motors.

Examine this motor *point by point* and you will readily see why! You, too, will recognize it as "the motor that matches in precision and performance the fine machines it drives."

Write for F-M *Ball-bearing* Motor facts and figures.

FAIRBANKS, MORSE & CO., CHICAGO

28 branches in principal cities at your service

FAIRBANKS-MORSE

Pioneer Manufacturers of

ball bearing motors



AEA30.8

Perfected Die Processing

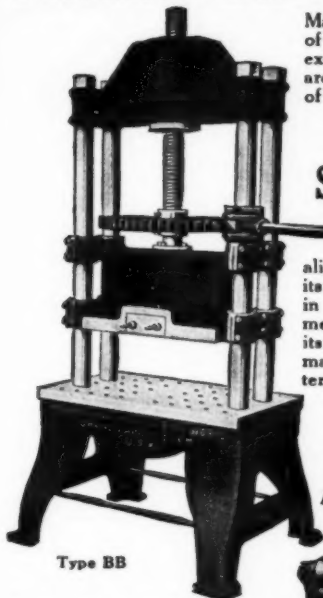
Malformed dies, waste of material and time, and excess operating expenses are obviated by the use of this

4-Post Screw Press

The precision with which it aligns punch and die, its power and simplicity in operation, and the mechanical perfection of its design, enable one man to do more and better work than two men can do any on other type of machine.

*80 tons pressure
Table 20"x36"*

Also three smaller sizes



Type BB

A Surface Grinder

that is a revelation in quiet, efficient work. Powerful, rigid, and sensitive in action. Equipped with all modern attachments.



**JARECKI MACHINE
AND TOOL CO.**

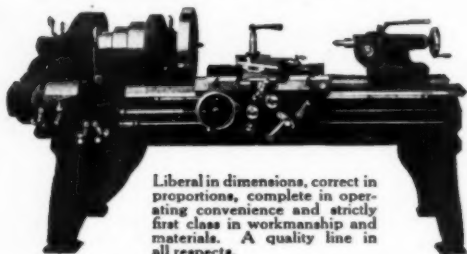
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GRAND RAPIDS,

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HAMILTON Rapid Production

Lathes—Planers—Vertical Drills



Liberal in dimensions, correct in proportions, complete in operating convenience and strictly first class in workmanship and materials. A quality line in all respects.

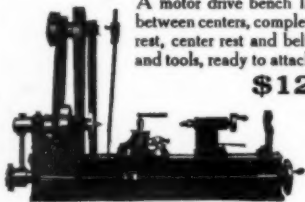
Full particulars free on request

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Live Agents Wanted In Open Territory

Just-Rite Lathes

Made in Sizes from 10-in. to 20-in.



A motor drive bench lathe, 10" swing, 24" between centers, complete with motor, swivel-rest, center rest and belting, including chuck and tools, ready to attach to your light socket.

\$125

JUST-RITE
for turning,
boring, mill-
ing and drill-
ing (not screw
cutting.)

Has Power Feed

Order one by express. Weight, 230 lbs.

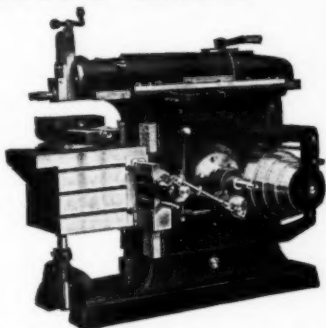
A. V. Carroll Machine Tool Co., Norwood, Cincinnati, O.

SHAPERS

12", 14", 16"
Plain Crank.
16", 20", 25"
B. G. Crank,
either Cone
Driven or
through Speed
Box.

Belt Shifter
Regular Equip-
ment All Cone
Driven Shapers.

32" Back Gear-
ed Crank, Sin-
gle Pulley
Drive.



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Die Making Machines

save an average of 50%

Dies, templets, experimental parts, gages and the like can be sawed, filed and lapped on the Oliver of Adrian Die Making Machine much easier, more accurately and in a fraction of the time ordinarily required for handwork.

We also manufacture a line of

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Drillpointers.

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Bulletins

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UTILITY: no corner is too inaccessible or too awkward for a Grant to place a rivet. Simplicity in manipulation admits its being operated by cheap labor.

SPEED: one rivet per second.

FINISH: rivets are headed to the exact degree of tightness you require, they are perfectly formed, and carry no marks of mutilation.

*Tell us your needs—or better still
send us samples for riveting.*

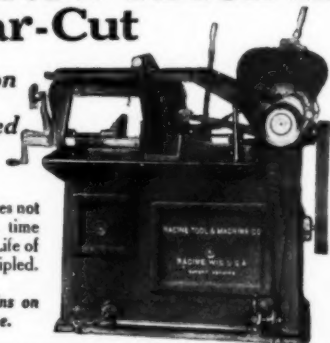
The Grant Mfg. & Machine Co.
C. E. Station, Bridgeport, Conn.

The New RACINE Shear-Cut

**Production
Saw for
High Speed
Metal
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Time per cut does not vary. Cutting time reduced half. Life of saw blades tripled.

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Excess Capacity—

A NEW DESIGN to meet Best Modern Standards



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**15/16-inch Geared Head
Motor Driven Lathe**

Ask for further details

**Carroll & Jamieson Machine Tool Co.
Batavia, Ohio**

Save Your Cutting Time

With An

**Oliver Quality
Metal Shear**



Steel bodies. Made
in two sizes for round
and flat stock and
thin sheets.

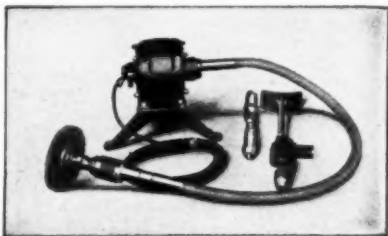
Place one in your
tool room.

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The Whirlwind Buffer and Grinder

**Will cut the cost on any unhandy
grinding or polishing job**



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**Stow Flexible Shaft Co., 3454 Ludlow St.,
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The Best Since 1876



NORTH SIDE

Electric

Grinders—Buffers

**Built complete ready to run.
No extra wiring required.**

**SIZES— $\frac{1}{4}$, $\frac{1}{2}$ & $\frac{3}{4}$ H. P.
A. C. 110 or 220**

**The North Side Tool Co.
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For All Forcing Operations

Illustration shows our No. 55 Power Drive Press, which is adaptable for fast production work and capable of supplying ten tons pressure.

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showing 30 different sizes*

Atlas Press Co.

*Department B,
Kalamazoo, Michigan*

Robertson's Economy Power Saws

Pay for themselves by the blades they save

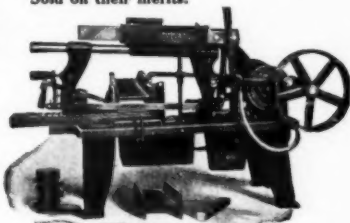
No. 5, the *Fast*
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Structural Iron
Cutting Saw.
8 x 15" capacity.

Blades 1 x 24".

No machine or
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Every machine
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Sold on their merits.



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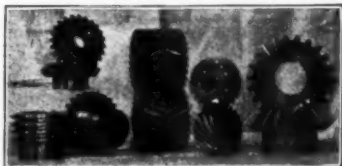
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Up to 3 ft. in Diameter



All Types

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THE BEST

ALL TYPES:

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Biax makes flexible shaft machines for drilling, boring, grinding, polishing, screw-setting, nut-setting, etc.

Special machines for—

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Mid-West Distributor—Tachometer Division
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110 V., A. C.
60 Cycles
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**ONLY
\$18.50**

WESTINGHOUSE Motor Grinder and Buffer

With Improved Base and Switch

Complete with
5x½ Precision
emery wheel,
24 section buff,
7 ft. of cord and
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A practical, efficient tool for shop,
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Distributed By:

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Grinds or Polishes

This job consists of grinding one side and squaring up another (2 ways) at one operation on the PORTER-CABLE Belt Grinder (smaller size). Better work in less time is the result.

Ask us about its proved economy on flat grinding

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THOMPSON
10"x36"
Universal

**ALL Grinding on
ONE Machine—**



**Saves
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These machines can now be equipped with the new independent automatic coarse cross feed for surface grinding.

For finest plain, surface, edge, die, cutter and internal grinding.

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Springfield, Ohio



"GUSHER" Pumps

Of Highest Quality—

Give Top-Notch Service

In all things, but proverbially in mechanism, the supreme test of excellence is simplicity—The "Gushers" are the simplest pumps made.

They have capacity plus—12 to 75 gallons per minute. Made also to set outside reservoir and connect by piping where that is desirable. Catalog and prices?

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OHIO



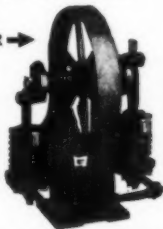
Petrick's "Ideal" Pump Inflates Profits

The single cylinder "Ideal" Electric Automatic Air Compressor and Exhaust Pump delivers two cubic feet of free air at 300 R. P. M. Quarter H. P. motor required for 200 lbs. pressure.

Price, pump only, \$22.50

← SINGLE CYLINDER

TWIN CYLINDER →

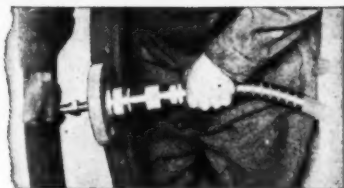


The twin cylinder pump delivers four cubic feet of free air at 300 R. P. M. Half H. P. motor required for 200 lbs. pressure.

Price, pump only, \$32.50

Equip your laboratory or factory with one—"Ideal" for use in connection with spray gun, glass blowing, etc.

PETRICK BROTHERS
2226 Belmont Ave., Chicago, Ill.



Operator easily grinding casting with Mall Flexible-Shaft ball-bearing hand spindle.

MALL TOOL CO.

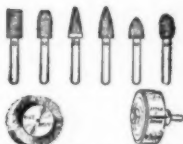
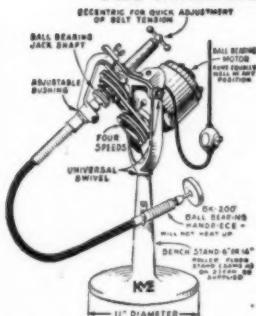
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$\frac{1}{4}$ — $\frac{1}{3}$ — $\frac{1}{2}$ H. P.
Speeds up to 10,500



COMPLETE LINE OF ACCESSORIES

Rotary Files—
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(See Pages 37 & 56)

Buhr Multiple Drillers

**With Fixed or
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All Spur Geared

Make a multiple drill out of any ordinary drill press.

The adjustable head is furnished with any number of spindles practicable, and will do 80% of the work now done by fixed center heads.

Radial ball bearings and spur gears throughout. Heads self-contained and dust-proof.

Special arms for close centers.

*Send us a lay-out of your multiple
drilling for cost estimate*

Buhr Machine Tool Co.

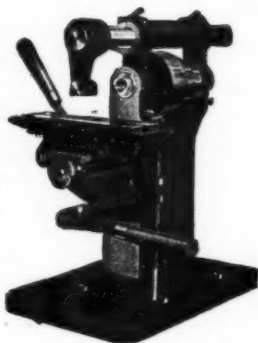
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It Will Meet Your Needs

U. S. Sensitive 14" Floor Drill

Built to drill holes up to $\frac{1}{2}$ " quickly, accurately and economically.

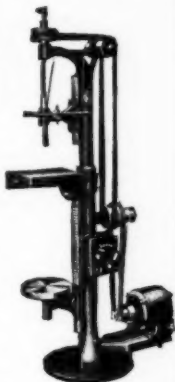
Price with motor,
switch and belts - **\$115**

Or with Counter-
shaft for Belt Drive **\$70**

Steel spindle ground to size, with ball thrust bearing; vertical adjustment to head; tables for long and short work; three speeds, etc. Further information gladly given upon request.

The U. S. Machine Tool Co.

1952 W. 6th St., Cincinnati, Ohio



U. S. MULTIPLE SPINDLE Drill Heads

Made regularly with 2 to 6 adjustable spindles, to drill in *any pattern*. Special heads to order.

Also made with fixed spindles to fit your work.

Drills two or more holes with the same speeds and feeds that are used for drilling one.

Send us a layout of your work and we'll help to reduce your costs

The United States Drill Head Co., 1952 W. Sixth St., CINCINNATI, O.

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T.H.L. Front Lever Bench Punch

Malleable iron body; working parts hardened. Steel shaft and plunger. Die cannot lose alignment with punch. All parts interchangeable. Built for hardest, toughest work.

PRICE \$45

Extra Punches, 20 cents each; extra dies, 30 cents.

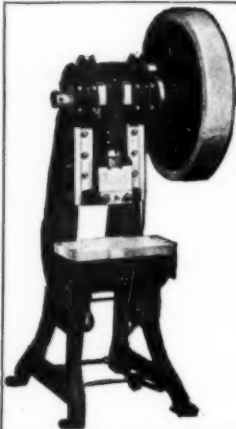
Capacity 13/32" thru 1/4" steel, 11/32" thru 5 16". Punches up to 1 2". Weight, 70 lbs.

A good buy; can ship promptly

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MACHINE CO.**

(Est. 1890)

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Performance

is the real basis of Punch Press Value. Rockford Hi-Duty Presses' *advanced design* enable them to meet Modern Demands.

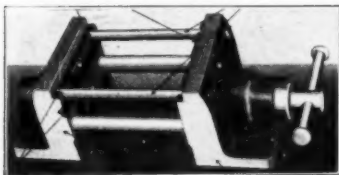
They earn their preference by their earning capacity.

Write today for catalog

**The Rockford Iron Works
Rockford, Ill.**

The DEMCO 4-Point Drill Press Vise

Patented



Holds any
shaped piece.

No extra parts
or pieces re-
quired.

*Bulletin on
request*

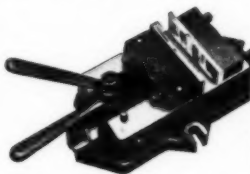
No. 4 has 4" jaws, opens 4½" Price \$15.00

No. 8 has 8" jaws, opens 8½" Price 25.00

Prices Net F. O. B. Baltimore

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Jaw width5"
Jaw depth1¼"
Maximum opening...3½"
Weight.....40 lbs.

Also made in the swivel-
jaw type with hard or soft
jaws, maximum opening
2¼".

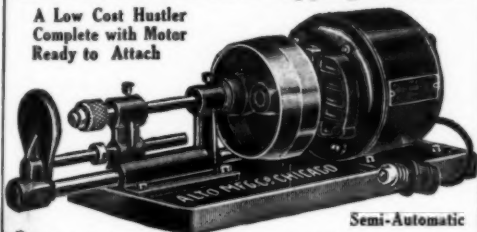
The "Hartford" is designed to give the utmost in service. A lower cam-faced handle gives required quick opening and return—while a top eccentric lever-handle furnishes tremendous binding power. You can rely on "Hartford" to survive the hardest usage. Its steel parts are drop forged, hardened and ground—its base is made of special iron.

Send for descriptive catalog illustrating its usefulness

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A Low Cost Hustler
Complete with Motor
Ready to Attach



Semi-Automatic

Its Main Points are— (1), High speed, with reverse threetimes as fast; (2), compact and complete, ready to attach to light socket; (3), so simple in construction that we can sell this high-grade tapper at a low price. Capacity, $\frac{7}{16}$ " in brass, $\frac{7}{32}$ " in steel. We also make larger motor driven Tapping Machines.

Write for descriptive circular and the moderate prices.

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Thor ELECTRIC DRILLS

**Big Powerful
Gears Stand
Gruelling Service**



Work a *Thor* Drill hour after hour, day after day. Put it on the most gruelling job you have. The big powerful gears will stand a world of abuse. The teeth are extra wide. They are made of special heat-treated alloy steel. The two radial bearings on the spindle insure permanent chuck alignment. No wobble—no breakage of drills. And for safety's sake—a 3-wire safety cable is standard equipment—shocks are impossible. Ask a *Thor* salesman about our liberal free trial offer—or write us.

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600 W. Jackson Blvd., Chicago, Ill.**



"WEAR-EVER"

Self-Aligning Reamer Holders

For Screw Machines—Turret Lathes—Drill Presses

COMPENSATES for all irregularities in machine alignment. Reamer can float to one side, at the same time swing on an angle in any direction to align itself with the work.

THESE HOLDERS are made in five standard sizes for reamers up to 3" diameter. Adaptable to any style machine drive or reamer shank.

ORDER ONE ON APPROVAL

Get our Small Tool Catalog No. 35 for details

SCULLY-JONES & CO., TOOL DIVISION
2010 W. 13th Street, CHICAGO, ILL.

Representatives and Local Stocks

CLEVELAND, OHIO, - Cleveland Tool & Supply Co., 1427 W. Sixth St.
DETROIT, MICH., - Gross & Heming, 704 Detroit Savings Bank Bldg.
NEW YORK CITY, - L. C. Biglow & Co., Inc., 250 W. 54th St.

Announcing!



A New Size *Ettco* Tapper

"Sensitive as
your Finger
Tips."

No. 1 Ettco Tapper—capacity $\frac{1}{4}$ -inch.

No. 2 Ettco Tapper—capacity $\frac{3}{8}$ -inch.

Users of the No. 1— $\frac{1}{4}$ -inch capacity Ettco High Speed Tapping Attachment will welcome the announcement of this New Size Ettco—the No. 2,—capacity up to $\frac{3}{8}$ inch.

Ettco Tappers eliminate tap breakage, whatever the cause. A "green" operator can bang the bottom of a tapped hole using an Ettco and still not break the tap—he has no friction to adjust.

Where Ettco Tappers have been installed tap breakage has been eliminated and production increased 100 to 500%.

You are interested in better tapping—take an Ettco Tapper for a ten days' trial—after the test, if you can then afford to be without it, send it back—no obligation.

Eastern Tube & Tool Co., Inc., 600 Johnson Ave., BROOKLYN, N. Y.



The Utility Sleeve Saves Tool Costs

This sleeve was designed for use in place of a taper shank with straight shank tools, such as drills, reamers, etc. It is also well adapted for the driving of taps.

Straight Shank tools used with the "Utility" work as efficiently as solid taper shank tools, but at a great saving; for only the straight shank of high speed steel is discarded when tools become worn or broken, and expensive chucks are done away with. Drives tools positive and true, without wrenches or screws.

Get our booklet; it teaches tool economy.

The J. C. Glenzer Co.

6469 Epworth Boulevard
DETROIT, MICHIGAN

High Speed Riveting Hammers

(Patd.)



Cold Riveting

$\frac{1}{64}$ to $1\frac{1}{2}$ " in diameter

*Write for
Catalog "C"*

SEND SAMPLES

to be riveted and
returned with complete
production data.

The High Speed Hammer Company, Inc.
311 Norton St., Rochester, N. Y.



In Spite of Precautions Taps Break in the Hole

That's bad enough—but the real expense comes in stripping the threads when you remove the broken tap.

The Walton Tap Extractor offers an effective, instantaneous way of overcoming this loss. Its steel fingers inserted in the broken tap remove it intact. An apprentice can operate it!

Made in three and four-flute styles

Often pays for itself in the 60 day trial allowed

The Walton Company
Hartford, Conn., U. S. A.

Vanderbeek Universal Joints



—represent the practical refinements of 25 years experience in manufacturing Universal Joints. All parts are generous sized, fully protected against dirt, and are practically self-oiling. Exceptionally strong, they transmit full power up to 70°.

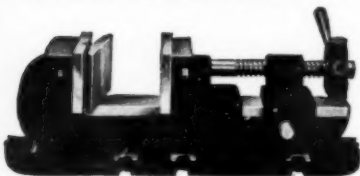
Vanderbeek Joints are in daily use on thousands of machines.

*Write today for our
Descriptive Catalog.*

American Tool Works, Inc.
Hartford, Conn., U. S. A.



'Most Efficient Vise Made'



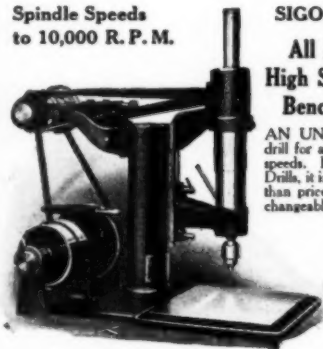
**GEM
Drill
Press
Vise**

THAT will also be your verdict when you know its power, capacity, adaptability and lightning speed of setting. Designed by a mechanic for mechanics. The independent swivel jaw holds taper and irregular work with a bull-dog grip. The Gem saves time in shop and factory. The folder shows its use in drilling and milling operations.

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**Spindle Speeds
to 10,000 R. P. M.**



SIGOURNEY No. 0

**All Ball Bearing
High Speed Sensitive
Bench Drill Press**

AN UNUSUALLY sensitive drill for accurate work at high speeds. Like all Sigourney Drills, it is sold on quality rather than price. All parts are interchangeable.

Sigourney Drills are made with one to four spindles. They are all extremely sensitive, accurate and durable.

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THE SIGOURNEY TOOL CO., HARTFORD, CONN.

**USE the CHICAGO No. 2
POWER PIPE THREADING MACHINE**



For
**Production
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Threading**

PORTABLE

Capacity:
 $\frac{1}{4}$ " to 2" Pipe
 $\frac{1}{2}$ " to $1\frac{1}{2}$ " Bolt

Featuring:

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2. Automatic Die Head
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4. Perfected Oil Control

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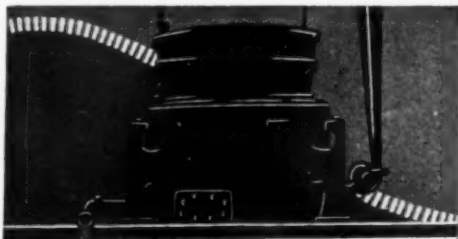
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**Better
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287 Styles & Sizes



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**Save
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6 to 15 gallons per load—
three or four loads per
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Tolhurst Machine Works
Established 1852
Troy, N. Y.



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TUCKER

Oil Hole Covers

ALSO—HERCULES
SHEAR AND ROD CUTTERS
AND
SCREW MACHINE PRODUCTS

A Type for Every Service

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FOREIGN AGENTS: Fenwick Freres & Co., Paris, France
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Half a Century of Service

Collets and Blanks that Survive Time



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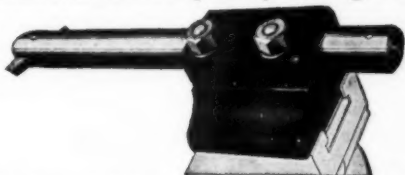
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MAXWELL Heavy Duty Boring Tool



When it comes to Boring, don't blame your lathe, it is no more rigid than the Tool you use.

We make a size for every lathe, fit to the lathe. Bar sizes from $\frac{3}{4}$ " to 3" Diameter.

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**IMPROVED E-Z SET BORING TOOLS
MAXWELL BORING TOOLS**

**M-P THREE TOOL TURRET
MILLING MACHINE SPACING WASHERS**

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No. 0 JUNIOR DRILL
10½" Swing, 0 to ¾" Capacity



Equipped with ¼ h. p. motor, two step cone pulley giving speeds of 1100 and 2300 r. p. m., horizontal drive gives full power to the 1¼" endless belt furnished with machine. Driven cone has bearing support at each end; all parts accurately machined and interchangeable. *Positively the greatest value ever offered in a machine of this kind.* Furnished with square machined base at same price.

Drills, Grinders, Disc Grinders, Saws, Sanders. All motor driven.

Send for circulars describing these machines or see your Dealer.

\$55, F. O. B. Elkhart

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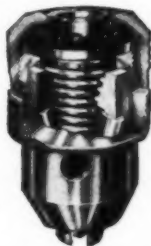
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Tremendous Gripping Power

Seven good reasons for using the

ETTCO

1. Lighter in weight.
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4. Hand operated.
5. Ball bearing.
6. Continuous grip.
7. Simple construction.



Eastern Tube & Tool Company, Inc.

600 Johnson Avenue, BROOKLYN, N. Y.

Curtis Universal Joints

of Simple, Rugged Construction



Send for new Catalog No. 47

BOSTON GEARS

BOSTON GEAR WORKS SALES CO.

Norfolk Downs, Mass.

BOSTON NEW YORK PHILADELPHIA CLEVELAND CHICAGO

E-Z THREAD DIAL

Thread cutting on engine lathes made easy, and at lower cost.

Can be easily attached to all size lathes.

A reliable device that will aid the operator in the work of cutting threads.

With it threads can be cut close up to shoulders as easily as the ordinary thread.



Eliminates stopping or reversing the lathe.

Does not require a backing belt.

The many repeat orders received prove it is satisfactory after trial.

A large corporation ordered thirteen, at one time.

Another nine and another five.

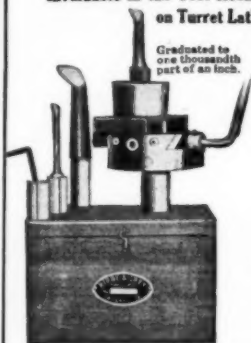
Sent on thirty days' trial.

Send for folder today.

**JAMES M. COLVEN, 20 Wolffe Street,
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R & G Adjustable Boring Tool

Invaluable in the Tool Room and on Production Work
on Turret Lathes, Horizontal Mills, Etc.



It saves time and insures accuracy in boring jig plates, dies, etc., on milling machine table and drill press, that cannot be handled on the lathe. It readily trues to size holes drilled on turret lathe.

Only \$38

If standard taper shank is required, the price is Five Dollars extra.

Send us your order or write for complete description of this handy, time-saving outfit.

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La Porte, Ind.

ARMSTRONG DROP FORGED WRENCHES

High-Grade Wrenches of All Kinds and Sizes



We also make—all of Armstrong quality—

Tool Holders
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"THE TOOL HOLDER PEOPLE"

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Analysis of Circulation of HITCHCOCK'S MACHINE TOOL BLUE BOOK By Dun and Bradstreet Ratings

	Number Concerns
Exceeding \$1,000,000.....	1,483
\$500,000 to \$1,000,000.....	916
\$300,000 to \$ 500,000.....	948
\$200,000 to \$ 300,000.....	842
\$125,000 to \$ 200,000.....	1,305
\$ 75,000 to \$ 125,000.....	1,455
\$ 50,000 to \$ 75,000.....	1,162
\$ 20,000 to \$ 50,000.....	2,847
\$ 10,000 to \$ 20,000.....	1,879
\$ 5,000 to \$ 10,000.....	1,672
TOTAL, Private Concerns Rated over \$5,000..	14,509
Steam and Street Railway Mechanical and Purchasing Officials, Government and Muni- cipal Plants, Technical Schools, Foreign Dealers in American Machinery, Etc.,.....	3,470
TOTAL to Buyers of Known Responsibility..	17,979
*Concerns quoted in Dun or Bradstreet, but without Capital Rating.....	2,802
Concerns not yet in either Dun or Bradstreet, but in current Telephone Directories.....	1,799
Concerns rated below \$5,000	2,677
TOTAL CIRCULATION	25,257

*This group includes a considerable number of large concerns, and many small concerns of high credit, whose capital rating is not given by either of the commercial agencies.

Rapid Keyseating—

In Quantity or in Small Lots

Davis No. 1
Cuts $1/16"$ to $1"$
Keyways



Cutting Keyway in Cone Pulley

THE DAVIS

has the
speed for
economical
production
of standard
parts.

THE DAVIS

can be
set up
quickly
in the
general
shop for
all sizes
of keyways
within its
capacity.

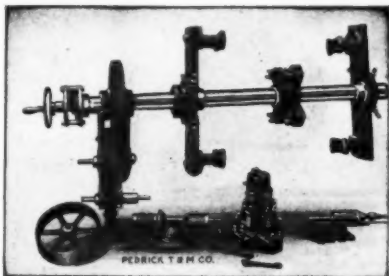
The Davis is simply constructed, is difficult to get out of order, and is easy to adjust and operate. It is a rapid and economical producer of accurate keyways under all conditions.

Write for folder, which describes it fully, with a table of cutting time that tells its own story.

Davis Keyseater Company

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Pedrick Portable Tools



Portable Cylinder Boring Bars

For reboring in position locomotive cylinders and piston valves, cylinders of stationary engines, steam hammers, air compressors, and a wide range of other work. Often it finishes a job before it could be gotten into the shop, saving time, expense and costly delays. Its saving on work that is difficult to move is out of all proportion to its moderate cost.

As for durability, we doubt if you can wear out a Pedrick built bar. Many machines we made 25 years ago are still in use.

We also build Floor Type Boring Machines, Crank Pin Turning Machines, Pipe Benders, Portable Milling Machines, etc.

Write for the Catalog today

Pedrick Tool & Machine Co.

3644 N. Lawrence St., Philadelphia, Pa.

Marvel High-Speed-Edge

**GENUINE H
CUT**

**Outlast O
and**



**Save Time—Cut Faster—
Eliminate Your Blade Troubles
By Using HIGH-SPEED-EDGE.**

**ONCE TRIED
ALWAYS USED**



Made in 1/2, 14,
21 and 24-inch
6, 8, 10 and 14
the inch in all le

WRITE US TODAY FOR FU

ARMSTRONG-BLUM MFG. CO., 341
Franci

Edge Hack Saw Blades

With

ONE HIGH SPEED STEEL CUTTING EDGE

last Ordinary Blades Many Times Over
and Never Break in the Machine



bles
GE.

in 12, 14, 17, 18,
24-inch lengths.

and 14 teeth to
in all lengths.



FOR FULL INFORMATION

**341 North
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The Rapid CATLIN Keyseaters

Reduce Shop Costs Everywhere



Let us have your inquiry today. We shall be glad to answer questions and to mail you an interesting folder. Why postpone?

*Successful in
Automobile Plants
Government Shops
Navy Yards
and many big
Domestic and
Foreign Factories*

Whether you need one keyseat or a thousand, the rapid "Catlin" will cut them to even better than 1000th of an inch accuracy. And its great speed explains its great economy. It cut a keyseat 6" long, 1" wide and 7/16" deep in a cast steel hub, in 3 minutes; this was in ordinary shop practice, with no attempt made to establish a record.

The picture shows the No. 1 Catlin, belt driven, with three-step cone pulley. Our other sizes, for belt or motor drive, cover practically all keyseating requirements.

Chattanooga Machinery Company

2401 Bennett Ave., Chattanooga, Tenn.



RAREFIED Dust Collector

Gives Unequalled

SERVICE

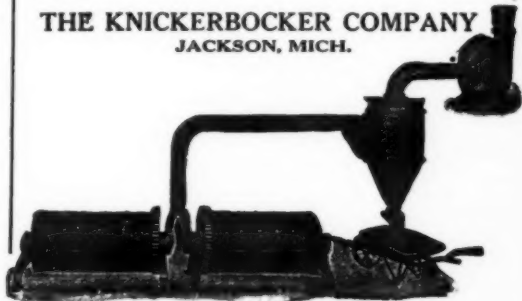
Because it collects all heavier than air dust—whether from emery wheels, sand blasts, tumbling mills or polishers—and discharges it automatically.

There's no abrasion of fan parts, and no internal wear to speak of. Rarefied has no screens to clog; inner walls are interchangeable, and require no hand cleaning.

It's more economical no matter how you figure. Since it can not get out of order, repair costs are held at zero. The partial vacuum principle on which it works has effected a 40 per cent saving in power in many plants.

*Many plants are using more than 25 Rarefieds
Let us tell you why this is*

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THE BACK-BONE of our business is our old friends. Each of them began with a single order. We gave them quality, prices and service that caused them to look to us as their regular source of supply.

WHATEVER your needs in our line, send us your blueprints and try us out. We want to serve you so well that you will become one of our "regulars."

Mail blueprint today for quotation

**American Hollow Boring Co.
Erie, Penna.**

Long Life in
BRIDGEBILT
Factory Seating

Select the chairs and stools for your factory from this line. They will meet your particular needs and stand up under any wear you give them.

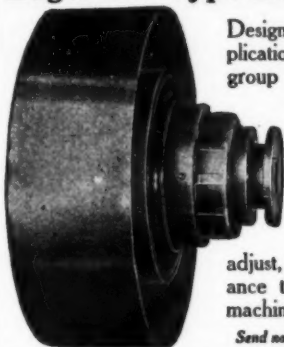
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illustrated folder*



The Chicago Wire Chair Co.

616 No. LaSalle St., Chicago, Ill.

Edgemont Type E Disc Clutch



Designed for machine applications, high speeds and group drives, but is also adaptable for any other drives where an efficient, powerful clutch is needed. Extremely easy to operate and adjust, with neat appearance to match the best machine tools.

Send now for "Type E" bulletin

THE EDMONT MACHINE CO., Dayton, Ohio

"The Handiest Racks" Ideal for Storage Out of the Way



The stands may be set against the wall for a *single-arm rack*, or out in the floor as a *double-arm rack*, and they are easily moved.

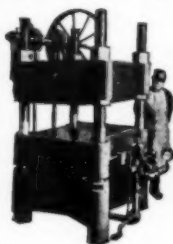
One satisfied user writes, "They can be set in places otherwise useless for stocking merchandise"—saving space.

Ideal for storing round stock, where it is easily handled on or off, and for keeping stock at machine, saving steps and time.

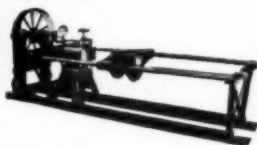
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They rarely come back*

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Lourie Hydraulic Presses



A complete line of Horizontal and Vertical Presses built for any tons capacity or specifications. Either hand or power operated.



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pay for
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a year.

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which earns
500% de-
serves your
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Combined Truck and Hoist—

"CanTon" Portable



You can easily figure the sav-
ing it effects—one man with a
Can Ton does the work which
ordinarily takes 6 to 10 men.

Can Ton lifts any shape or
size piece, weighing up to 6000
pounds, *moves* it anywhere
about the shop, and *places*
it where you want.

Safety friction brake holds the
load at any point, insuring
safety to the operator and work.

Made in several sizes

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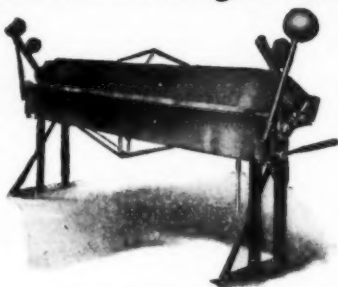
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Chicago Steel Bending Brakes

Hand and power, for bending from light sheets up to $\frac{3}{4}$ in. plate.

More than 25,000 in use.

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For Sure Balance--

an absolutely level and solid "Way" is necessary

Bowsher "Balancing Ways"



are brought to an absolute level in ten seconds. No revolving parts.

The edges or "knives" upon which the work is tested are ground true, and are mounted upon the planed "ways" of a heavy bed or frame.

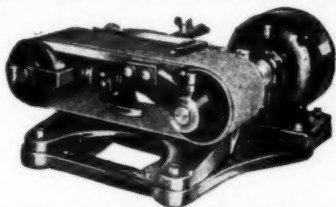
Standards adjustable to suit length of arbor.

Three sizes for floor—one for bench use

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Simplex-M Abrasive Band Grinder



For Roughing, Smoothing or Fine Finishing

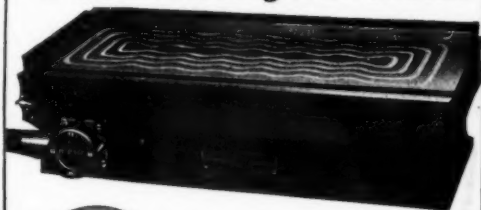
Produces Straight Grain
Surface and Sharp Edges

Used on Metals,
Woods and Compositions

Details of this and other styles and sizes on request.

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Our Extensive Line covers a wide range. They save time and cut costs holding iron and steel pieces. Glad to investigate and report on any problem you may have in connection with the use of Flat and Rotary Magnetic Chucks. Address

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Always Ready for Service—

Our Stock Room Service is complete. We can fill all orders the day they're received.

BUCKEYE BETTER BUILT BUSHINGS

These Stock Bushings come machined, ready for instant use. All are broached, burnished and *ground* to extreme uniform accuracy. Standard or special oil grooves or drilled holes at a small extra charge. Rigid inspection prevails.

We also make to *Blue Print*—bushings, bearings and cast bronze screw machine products in any quantity, any size, any analysis.

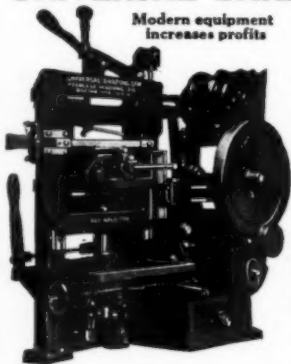


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Modern equipment
increases profits

Different Principles
Greater Efficiency

Give The Most Of—
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SIZES:

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HIGH SPEED HACK-SAWS

6"x6" 9"x9" 13"x16"

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Peerless Machine Co.

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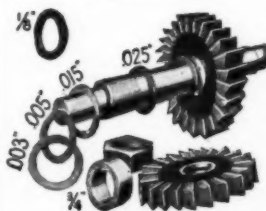
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Made of a good grade of Cold Rolled Strip Steel, also known as Shim Steel



Stock sizes for arbors of following diameters: $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, 1, $1\frac{1}{8}$, $1\frac{1}{4}$, $1\frac{3}{4}$, $1\frac{1}{2}$, $1\frac{3}{8}$, $1\frac{3}{4}$, $1\frac{7}{8}$, 2, $2\frac{1}{4}$, $2\frac{1}{2}$, 3, $3\frac{1}{2}$ and 4 in. and larger.

Stock thicknesses: .002, .003, .004, .005, .006, .007, .008, .010, .012, .015, .020, .025, .032, .047, .063, .093 and .125 inch.

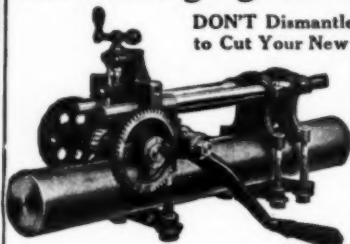
Other thicknesses up to 3.000" made to order, with keyways if so ordered.

Ask us to send samples; you'll like them

Detroit Stamping Company
 3443 West Fort St., Detroit, Mich.

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**DON'T Dismantle Shafting
to Cut Your New Keyseats**



**Use a
BURR
Portable
Keyseater**

Cuts accurate
Keyways up to
12" long any-
where, in any
position, in shafts
up to 5" diam.

Seven sizes. Operates by hand or power

Over 10,000 in use; order now and save money

JOHN T. BURR & SON
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KEYSEATER

THAT

DOES MANY THINGS

We will be glad to
tell you if you ask
for Catalog O.



National Machine Tool Co.

2268 Spring Grove Ave.,

Cincinnati, O.

Made in 6 Sizes for Balancing Anything That Revolves up to 24000 lbs.



Anderson Improved Balancing Ways

Require no leveling or adjustment. They are especially sensitive! Spindles and discs are hardened—like the frame—they cannot lose their effectiveness or become injured by use.

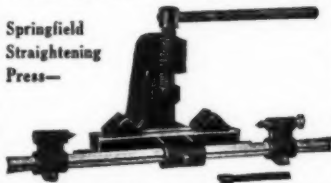
"Swing"	20"	40"	60"	72"	96"	72"
Greatest distance bet. standards	20"	30"	30"	66"	88"	20"
Capacity in lbs.	1000	2000	2000	5000	10000	24000
Approx. shipping weight	45	90	150	350	650	
Code	Bend	Bid	Bis	Bib	Ben	

Any of above can be furnished with longer shafts

Anderson Bros. Mfg. Co.
1915 Kishwaukee St., Rockford, Ill.

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Springfield
Straightening
Press—



Made in
Three sizes
Each a real
Time saver

Wherever straightening is needed, the Springfield gives satisfaction. Whether in shop, tool room, or garage. It can be operated with such accuracy and speed that users have named it *the acme of convenience*.

Placed near lathe or bench, for example, a tool maker can straighten any length of rough or unfinished work without leaving his post.

A Springfield quality product! Let us send a catalog

The Springfield Machine Tool Company
633 West Southern Avenue, SPRINGFIELD, OHIO
We also manufacture Engine Lathes and Shapers

Classified Finding Index

Air Compressors, Electric

Patrick Bros., 2226 Belmont Ave., Chicago

Arbors, Solid

Nicholson & Co., W. H., Wilkes-Barre, Pa.

Auto-Gages For Dies

Danly Machine Specialties, Inc., 4913 Lincoln Ave., Chicago

Automatics

New Britain Machine Co., New Britain, Conn.

Balancing Ways

Anderson Bros. Mfg. Co., Rockford, Ill.
Hewsher Co., N. F., South Bend, Ind.

Balls, Bearing and Burnishing

Abbott Ball Co., Hartford, Conn.

Band Saw Machines, for Metal

Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago
Porter-Cable Machine Co., Syracuse, N. Y.

Barrels, Tumbling

Abbott Ball Co., Hartford, Conn.
Scully-Jones & Co., 2012 W. 13th, Chicago

Bench Legs, Steel

New Britain Mch. Co., New Britain, Conn.

Bending Machines, Hand and Power

Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Lewthwaite Mch. Co., T. H. 417 E. 81st., N. Y.
Lourie Hydraulic Co., Springfield, Ill.
Pedrick Tool & Machine Co., Philadelphia

Bending Rolls

Ercis & Krump Mfg. Co., 7422 Loomis Blvd., Chicago
Hendley & Whittemore Co., Beloit, Wis.

Bolt and Nut Machinery

Economy Engineering Co., Willoughby, O.
Foots-Burt Co., Cleveland, O.

Boring Bars

Pedrick Tool & Machine Co., Philadelphia

Boring Bars, Cylinder

Pedrick Tool & Machine Co., Philadelphia

Boring, Drilling & Milling Machines

Barnes Co., W. F. & John, Rockford, Ill.
Landis Tool Co., Waynesboro, Pa.
Sommer & Adams Co., Cleveland, O.

Boring Machines, Horizontal

Avey Drilling Machine Co., Cincinnati
Pedrick Tool & Machine Co., Philadelphia

Boring Tools

Maxwell Products Co., Cleveland, O.
Hibbe & Gray, La Porte, Ind.

Brakes, Steel, Hand and Power

Ercis & Krump Mfg. Co., 7422 Loomis Blvd., Chicago

Brands, Burning

Schwerdtle Stamp Co., Bridgeport, Conn.

Buildozers, Hydraulic

Lourie Hydraulic Co., Springfield, Ill.

Burnishing Equipment, Ball

Abbott Ball Co., Elmwood, Conn.

Bushings

Buckeye Brass & Mfg. Co., Cleveland, O.

Bushing Finishing Machines.

Economy Engineering Co., Willoughby, O.

Chucking Machines

New Britain Mch. Co., New Britain, Conn.
Springfield Machine Tool Co., Springfield, O.

Chucks, Collet

Hardinge Brothers, Inc., 1770 Bortessau Ave., Chicago

Chucks, Drill

Eastern Tube & Tool Co., Inc., 680 Johnson Ave., Brooklyn, N. Y.
Hartford Special Mch. Co., Hartford, Conn.
Scully-Jones & Co., 2012 W. 13th, Chicago

Chucks, Drill and Tap

Scully-Jones & Co., 2012 W. 13th, Chicago

Chucks, Keyway Cutting

Scully-Jones & Co., Ry. Exch. Bldg., Chicago

Chucks, Magnetic

J. & H. Electric Co., Providence, R. I.

Clamps, Die

Danly Machine Specialties, Inc., 4913 Lincoln Ave., Chicago

Clutches, Friction

Edgement Machine Co., Dayton, O.

Cold Saws

Burke Machine Tool Co., Connecticut, Ohio

Collets

Hardinge Brothers, Inc., 1770 Bortessau Ave., Chicago
Wade Tool Co., Waltham, Mass.

Contract Work Wanted

Burke Machine Tool Co., Connecticut, Ohio

Counterbores and Spot Facers

Glenzer Co., J. C., Detroit, Mich.

Couplings, Flexible

Nicholson Co., W. H., Wilkes-Barre, Pa.

Couplings, Shaft

Nicholson Co., W. H., Wilkes-Barre, Pa.

Cranes, Portable

Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Canton Foundry & Mch. Co., Canton, Ohio

Crank Pin Turning Machine

Pedrick Tool & Machine Co., Philadelphia

Cutters, Keyscutting

Davis Keyseater Co., Rochester, N. Y.
Scully-Jones & Co., 2012 W. 13th, Chicago

Cutters, Milling

Genesee Mfg. Co., Rochester, N. Y.

Cylinder Boring Machines, Portable

Pedrick Tool & Machine Co., Philadelphia

Demagnetisers

J. & H. Electric Co., Providence, R. I.

Classified Finding Index

Die Making Machines
Oliver Instrument Co., Adrian, Mich.

Dies
Sloan & Chace, Inc., Newark, N. J.

Die Sets
Dancy Machine Specialties, Inc., 4913 Lincoln Ave., Chicago

Drill Racks
Peerless Machine Co., Racine, Wis.

Drill Tables and Vise
Modern Machine Tool Co., Jackson, Mich.

Drilling Machine Heads, Multiple
Ruhr Machine Tool Co., Ann Arbor, Mich.
United States Drill Head Co., Cincinnati

Drilling Machines, Bench
Avery Drilling Machine Co., Cincinnati
Barnes Co., W. F. & John, Rockford, Ill.
Burke Machine Tool Co., Conneaut, Ohio
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Edlund Machinery Co., Inc., Cortland, N. Y.
High Speed Hammer Co., Rochester, N. Y.
Merit Oil Equipment Co., Cleveland, O.
Sigourney Tool Co., Hartford, Conn.
Sloan & Chace, Inc., Newark, N. J.
Stecher Co., Chas., 2452 N. Greenview Ave., Chicago
Taylor & Fenn Co., Hartford, Conn.
Winterhoff Tool & Machine Co., Elkhart, Ind.

Drilling Machines, Flexible Shaft
Blax Flexible Shaft Co., 136 Liberty Street, New York

Drilling Machines, Horizontal
Barnes Co., W. F. & John, Rockford, Ill.
Edlund Machinery Co., Inc., Cortland, N. Y.

Drilling Machines, Multiple Spindle
Avery Drilling Machine Co., Cincinnati
Edlund Machinery Co., Inc., Cortland, N. Y.
Foote-Burt Co., Cleveland, O.
Kent Machine Co., Kent, Ohio.
Merit Oil Equipment Co., Cleveland, O.
Sigourney Tool Co., Hartford, Conn.
Taylor & Fenn Co., Hartford, Conn.

Drilling Machines, Portable Electric
Blax Flexible Shaft Co., 136 Liberty St., New York
Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago
Mall Tool Co., 8389 S. Chicago Ave., Chicago
Standard Electrical Tool Co., Cincinnati, O.
Stow Flexible Shaft Co., Philadelphia, Pa.
Strand Co., N. A., 6001 N. Lincoln St., Chicago
Winterhoff Tool & Machine Co., Elkhart, Ind.

Drilling Machines, Post
Canedy-Otto Mfg. Co., Chicago Heights, Ill.

Drilling Machines, Radial
American Tool Works Co., Cincinnati, O.
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Taylor & Fenn Co., Hartford, Conn.

Drilling Machines, Sensitive
Avery Drilling Machine Co., Cincinnati
Barnes Co., W. F. & John, Rockford, Ill.
Burke Machine Tool Co., Conneaut, Ohio
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Edlund Machinery Co., Inc., Cortland, N. Y.
Foote-Burt Co., Cleveland, O.
Leland-Gifford Co., Worcester, Mass.
Merit Oil Equipment Co., Cleveland, O.

Sigourney Tool Co., Hartford, Conn.
Stecher Co., Chas., 2452 N. Greenview Ave., Chicago
Taylor & Fenn Co., Hartford, Conn.
U. S. Machine Tool Co., Cincinnati, O.

Drilling Machines, Vertical
Avery Drilling Machine Co., Cincinnati
Barnes Co., W. F. & John, Rockford, Ill.
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Edlund Machinery Co., Inc., Cortland, N. Y.
Foote-Burt Co., Cleveland, O.
Leland-Gifford Co., Worcester, Mass.
Merit Oil Equipment Co., Cleveland, O.
Sigourney Tool Co., Hartford, Conn.
Standard Electrical Tool Co., Cincinnati, O.
Stecher Co., Chas., 2452 N. Greenview Ave., Chicago
Taylor & Fenn Co., Hartford, Conn.

Dust Handling Equipment
Knickerbocker Co., Jackson, Mich.

Emery Wheel Dressers and Cutters
Ross Manufacturing Co., Cleveland, O.
Taylor & Fenn Co., Hartford, Conn.
Western Tool & Mfg. Co., Springfield, O.

Engravers, Mechanical and Hand
Schwerdtle Stamp Co., Bridgeport, Conn.

Etching Machines, Electric
Brewster Co., Wm., Inc., 50 Church St., New York
Martindale Electric Co., Cleveland, O.

Feeders, Oil and Soda Water
New Britain Machine Co., New Britain, Conn.

Filing Room Equipment
Wardwell Mfg. Co., Cleveland, O.

Forges
Canedy-Otto Mfg. Co., Chicago Heights, Ill.

Forgings, Hollow Bored
American Forge Co., 2621 So. Heyne Ave., Chicago
American Hollow Boring Co., Erie, Pa.

Furniture, Machine Shop
New Britain Machine Co., New Britain, Conn.
Western Tool & Mfg. Co., Springfield, O.

Gauges, Taper
Hartford Special Mch. Co., Hartford, Conn.

Gear Cutting Machines
Sloan & Chace, Inc., Newark, N. J.

Gears
Boston Gear Works Sale Company, Norfolk
Massachusetts Gear & T. Co., Woburn, Mass.

Grinders and Buffers
Grant Auto Appliance Co., 2415 W. 14th, Chicago

Grinding Machines, Belt
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Peerless Surfacing Machine Co., Troy, N. Y.
Wells Sales Corp., 96 Warren St., New York

Grinding Machines, Bench
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Standard Electrical Tool Co., Cincinnati, O.

Classified Finding Index

Grinding Machines, Cutter, Reamer and Tool
 Gallmeyer & Livingston Co., Grand Rapids, Mich.
 Jarecki Mch. & T. Co., Grand Rapids, Mich.
 Landis Tool Co., Waynesboro, Pa.
 LeBlond Mch. Tool Co., R. K., Cincinnati, O.
 Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Cylindrical
 Jarecki Mch. & T. Co., Grand Rapids, Mich.
 Landis Tool Co., Waynesboro, Pa.
 Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Die
 Gallmeyer & Livingston Co., Grand Rapids, Mich.
 Jarecki Mch. & T. Co., Grand Rapids, Mich.
 Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Disc
 Gallmeyer & Livingston Co., Grand Rapids, Mich.
 Gardner Machine Co., Belfit, Wis.
 Porter Cable Machine Co., Syracuse, N. Y.

Grinding Machines, Drill
 Gallmeyer & Livingston Co., Grand Rapids, Mich.
 La Salle Tool Co., Ottawa, Ill.
 Oliver Instrument Co., Adrian, Mich.

Grinding Machines, Electric
 Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago
 North Side Tool Co., Dayton, Ohio

Grinding Machines, Face
 Taylor & Fenn Co., Hartford, Conn.

Grinding Machines, Flexible Shaft
 Blax Flexible Shaft Co., 136 Liberty Street, New York
 Kallier Mch. Eng. Corp., 68A Washington St., Brooklyn, N. Y.

Grinding Machines, Internal
 Landis Tool Co., Waynesboro, Pa.
 Hall Tool Co., 8389 S. Chicago Ave., Chgo.
 Taylor & Fenn Co., Hartford, Conn.
 Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Portable Electric
 Blax Flexible Shaft Co., 136 Liberty St., New York
 Hall Tool Co., 8389 S. Chicago Ave., Chgo.
 Porter Cable Machine Co., Syracuse, N. Y.
 Standard Electrical Tool Co., Cincinnati, O.
 Stow Flexible Shaft Co., Philadelphia, Pa.
 Strand Co., N. A., 5001 N. Lincoln St., Chgo.

Grinding Machines, Snagging
 Gallmeyer & Livingston Co., Grand Rapids, Mich.
 Jarecki Mch. & T. Co., Grand Rapids, Mich.

Grinding Machines, Surface
 Gallmeyer & Livingston Co., Grand Rapids, Mich.
 La Salle Tool Co., Ottawa, Ill.
 Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Tap
 Gallmeyer & Livingston Co., Grand Rapids, Mich.

Grinding Machines, Tool
 Kent Machine Co., Kent, Ohio.
 Standard Electrical Tool Co., Cincinnati, O.
 Taylor & Fenn Co., Hartford, Conn.

Grinding Machines, Universal
 Gallmeyer & Livingston Co., Grand Rapids, Mich.
 Landis Tool Co., Waynesboro, Pa.
 Thompson Grinder Co., Springfield, Ohio

Hack Saw Blades
 Peerless Machine Co., Racine, Wis.

Hack Saw Machines
 Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago
 Peerless Machine Co., Racine, Wis.
 Racine Tool & Machine Co., Racine, Wis.
 Robertson Machine & Foundry Co., Buffalo, N. Y.

Hammers, Air
 Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago

Hammers, Riveting
 High Speed Hammer Co., Rochester, N. Y.
 Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago

Hoists, Electric
 Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago

Hoists, Portable
 Canton Foundry & Machine Co., Canton, Ohio

Hydraulic Machinery
 Laurie Hydraulic Co., Springfield, Ill.

Jigs and Fixtures
 Hartford Special Mch. Co., Hartford, Conn.
 Sloan & Chace, Inc., Newark, N. J.

Keyseating Machines
 Burr & Son, John T., Brooklyn, N. Y.
 Chattanooga Mch. Co., Chattanooga, Tenn.
 Davis Keyseater Co., Rochester, N. Y.
 National Machine Tool Co., Cincinnati

Lathe Accessories and Attachments
 Cisco Machine Tool Co., Cincinnati, O.
 Maxwell Products Co., Cleveland, O.

Lathes, Turrets
 Maxwell Products Co., Cleveland, O.

Lathes, Bench
 Hardinge Brothers, Inc., 1770 Bortean Ave., Chicago
 Monarch Machine Tool Co., Sidney, O.
 Oliver Mfg. Co., W. W., Buffalo, N. Y.

Lathes, Engine
 American Tool Works Co., Cincinnati, O.
 Barnes Co., W. F. & John, Rockford, Ill.
 Bradford Machine Tool Co., Cincinnati, O.
 Carroll Mch. Tool Co., A. V., Cincinnati, O.
 Carroll & Jamieson Mch. Tool Co., Batavia, O.
 Claco Machine Tool Co., Cincinnati, O.
 Hamilton Tool Co., Hamilton, O.
 Hardinge Brothers, Inc., 1770 Bortean Ave., Chicago
 LeBlond Mch. Tool Co., R. K., Cincinnati, O.
 Monarch Machine Tool Co., Sidney, O.
 Porter-Cable Machine Co., Syracuse, N. Y.
 Springfield Machine Tool Co., Springfield, Ohio

Lathes, Extension Bed Gap
 Rahn-Larmon Co., Cincinnati, O.

Lathes, Foot Power
 Barnes Co., W. F. & John, Rockford, Ill.

Lathes, Gap
 Carroll Mch. Tool Co., A. V., Cincinnati, O.

Lathes, Manufacturing
 Sloan & Chace, Inc., Newark, N. J.

Lathes, Precision
 Sloan & Chace, Inc., Newark, N. J.
 Wade Tool Co., Waltham, Mass.

Lathes, Short Bed
 Monarch Machine Tool Co., Sidney, O.
 Porter-Cable Machine Co., Syracuse, N. Y.

Classified Finding Index

- Lathes, Turret**
Bradford Machine Tool Co., Cincinnati, O.
Monarch Machine Tool Co., Sidney, O.
- Mandrels, Expanding**
Nicholson & Co., W. H., Wilkes-Barre, Pa.
Western Tool & Mfg. Co., Springfield, O.
- Mandrels, Solid**
Nicholson & Co., W. H., Wilkes-Barre, Pa.
- Milling Attachments**
Burke Machine Tool Co., Connecticut, Ohio
Kearney & Trecker Corp., Milwaukee, Wis.
LeBlond Mch. Tool Co., R. K., Cincinnati, O.
Porter-Cable Machine Co., Syracuse, N. Y.
Taylor & Fenn Co., Hartford, Conn.
- Milling Machine Spacing Washers**
Maxwell Products Co., Cleveland, O.
- Milling Machines, Bench**
Burke Machine Tool Co., Connecticut, Ohio
Sloan & Chace, Inc., Newark, N. J.
- Milling Machines, Hand**
Burke Machine Tool Co., Connecticut, Ohio
U. S. Machine Tool Co., Cincinnati, O.
- Milling Machines, Manufacturing**
Kearney & Trecker Corp., Milwaukee, Wis.
- Milling Machines, Plain**
Burke Machine Tool Co., Connecticut, Ohio
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Kearney & Trecker Corp., Milwaukee, Wis.
LeBlond Mch. Tool Co., R. K., Cincinnati, O.
- Milling Machines, Portable**
Fedrick Tool & Machine Co., Philadelphia
- Milling Machines, Spline**
Taylor & Fenn Co., Hartford, Conn.
- Milling Machines, Universal**
Kearney & Trecker Corp., Milwaukee, Wis.
LeBlond Mch. Tool Co., R. K., Cincinnati, O.
- Milling Machines, Vertical**
Burke Machine Tool Co., Connecticut, Ohio
Kearney & Trecker Corp., Milwaukee, Wis.
LeBlond Mch. Tool Co., R. K., Cincinnati, O.
Taylor & Fenn Co., Hartford, Conn.
- Mills, Adjustable Hollow**
Genesee Mfg. Co., Rochester, N. Y.
- Motors, Electric**
Fairbanks, Morse & Co., Chicago
Reliance Electric & Eng. Co., Cleveland
- Name Plates, Etched and Stamped**
Schwerdtle Stamp Co., Bridgeport, Conn.
- Nut Setters, Flexible Shaft**
Blax Flexible Shaft Co., 138 Liberty Street,
New York
- Oil Cups**
Gits Bros. Mfg. Co., 1940 S. Kilbourn Ave.,
Chicago
- Oil Extractors**
Tucker, W. W. & C. F., Inc., Hartford, Conn.
- Oil Hole Covers**
Tucker, W. W. & C. F., Inc., Hartford, Conn.
- Pattern Shop Machinery**
Towsley Mfg. Co., John T., Cincinnati
- Pinion Cutting Machines**
Sloan & Chace, Inc., Newark, N. J.
- Pins, Leader And Dowel**
Dandy Machine Specialties, Inc., 4018 Lincoln
Ave., Chicago
- Pipe Bending Machines**
Fedrick Tool & Machine Co., Philadelphia
- Pipe Cutting and Threading Machines**
Chicago Pipethread Co., Racine, Wis.
- Planers, Valve Seat, Portable**
Fedrick Tool & Machine Co., Philadelphia
- Point Thinning Machines**
Oliver Instrument Co., Adrian, Mich.
- Pointers, Semi-Automatic**
Kent Machine Co., Kent, Ohio.
- Polishing and Buffing Machines**
Cisno Machine Tool Co., Cincinnati, O.
Independent Pneumatic Tool Co., 600 W.
Jackson Blvd., Chicago
Mall Tool Co., 8289 S. Chicago Ave., Chicago
New Britain Machine Co., New Britain, Conn.
North Side Tool Co., Dayton, Ohio
Standard Electrical Tool Co., Cincinnati, O.
- Presses, Arbor**
Atlas Press Co., Kalamazoo, Mich.
Barnes Co., W. F. & John, Rockford, Ill.
Lourie Hydraulic Co., Springfield, Ill.
Nicholson & Co., W. H., Wilkes-Barre, Pa.
- Presses, Broaching**
Lourie Hydraulic Co., Springfield, Ill.
- Presses, Drawing**
Lourie Hydraulic Co., Springfield, Ill.
- Presses, Flanging**
Lourie Hydraulic Co., Springfield, Ill.
- Presses, Foot**
Rockford Iron Works, Rockford, Ill.
Taylor & Fenn Co., Hartford, Conn.
- Presses, Forcing**
Lourie Hydraulic Co., Springfield, Ill.
- Presses, Forming**
Dreis & Krump Mfg. Co., 7422 Loomis Blvd.,
Chicago
Lourie Hydraulic Co., Springfield, Ill.
- Presses, Power**
Hendley & Whittemore Co., Beloit, Wis.
Lourie Hydraulic Co., Springfield, Ill.
Rockford Iron Works, Rockford, Ill.
- Presses, Punch**
Lawthwaite Mch. Co., T. H., 417 E. 91st., N. Y.
Rockford Iron Works, Rockford, Ill.
- Presses, Screw**
Barnes Co., W. F. & John, Rockford, Ill.
Jarecki Mch. & T. Co., Grand Rapids, Mich.
Towsley Mfg. Co., John T., Cincinnati
- Presses, Wheel**
Lourie Hydraulic Co., Springfield, Ill.
- Profiling Machines**
Oliver Instrument Co., Adrian, Mich.
- Pulley Machinery**
Avey Drilling Machine Co., Cincinnati

Classified Finding Index

Pumps, Coolant

Fulfo Specialties Co., Manchester, O.

Pumps, Exhaust

Petrick Bros., 2226 Belmont Ave., Chicago

Pumps, Hydraulic

Louise Hydraulic Co., Springfield, Ill.

Pumps, Lubricant

Rothman Machinery Co., Cincinnati, O.

Punch Press Feeds

Hockford Iron Works, Hockford, Ill.

Punch, Shear and Bender, Hand

Armstrong-Bium Mfg. Co., 341 N. Francisco Ave., Chicago

Punches, Hand

Armstrong-Bium Mfg. Co., 341 N. Francisco Ave., Chicago

Hendley & Whittemore Co., Beloit, Wis.

Lewthwaite Mch. Co., T. H., 417 E. 31st St., New York

Whitney Metal Tool Co., Hockford, Ill.

Punches, Power

Hendley & Whittemore Co., Beloit, Wis.

Punches and Dies

Hendley & Whittemore Co., Beloit, Wis.

Lewthwaite Mch. Co., T. H., 417 E. 31st St., N. Y.

Hockford Iron Works, Hockford, Ill.

Racks, Bar Stock

New Britain Machine Co., New Britain, Conn.

Yoke Supply Co., Wm. B., Canton, O.

Reamers, Adjustable

Schellenbach-Hunt Tool Co., Cincinnati, O.

Reamer Holders

Nicholson & Co., W. H., Wilkesbarre, Pa.

Reels, Extension

Cincinnati Specialty Mfg. Co., Cincinnati, O.

Riveting Machines

Grant Mfg. & Mch. Co., Bridgeport, Conn.

High Speed Hammer Co., Rochester, N. Y.

Rod Cutters

Armstrong-Bium Mfg. Co., 341 N. Francisco Ave., Chicago

Hendley & Whittemore Co., Beloit, Wis.

Lewthwaite Mch. Co., T. H., 417 E. 31st St., N. Y.

Tucker, W. W. & C. F., Inc., Hartford, Conn.

Saw Sharpening Machines

Wardwell Mfg. Co., Cleveland, O.

Scraping Machines, Hand & Pneumatic

Anderson Brothers Mfg. Co., Hockford, Ill.

Screw Drivers, Electric

Independent Pneumatic Tool Co., 689 W. Jackson Blvd., Chicago

Screw Drivers, Flexible Shaft

Max Flexible Shaft Co., 136 Liberty Street, New York

Screw Driving Machines, Automatic

Reynolds Machine Co., Massillon, Ohio

Screw Machine Products

Buckeye Brass & Mfg. Co., Cleveland, O.

Screw Machines, Automatic

New Britain Mch. Co., New Britain, Conn.

Screw Slotters

Kent Machine Co., Kent, Ohio.

Shafts, Flexible

Max Flexible Shaft Co., 136 Liberty St., N. Y.

Keller Mech. Eng. Corp., 48A Washington St., Brooklyn, N. Y.

Mail Tool Co., 8389 S. Chicago Ave., Chgo.

Stow Flexible Shaft Co., Philadelphia, Pa.

Strand Co., N. A., 5001 N. Lincoln St., Chgo.

Shafts, Steel

American Hollow Boring Co., Erie, Pa.

Shaping Machines

American Tool Works Co., Cincinnati, O.

Osborne & Sexton Machy. Co., Columbus, O.

Roden Mfg. Co., Hartford, Conn.

Smith & Mills Co., Cincinnati

Springfield Machine Tool Co., Springfield, O.

Shears, Alligator

Canton Foundry & Machine Co., Canton, O.

Shears, Hand

Armstrong-Bium Mfg. Co., 341 N. Francisco Ave., Chicago

Dreis & Krump Mfg. Co., 7422 Loomis Blvd., Chicago

Hendley & Whittemore Co., Beloit, Wis.

Lewthwaite Machine Co., T. H., 417 E. 31st St., New York

Oliver Mfg. Co., W. W., Buffalo, N. Y.

Tucker, W. W. & C. F., Inc., Hartford, Conn.

Whitney Metal Tool Co., Hockford, Ill.

Shears, Power

Hendley & Whittemore Co., Beloit, Wis.

Slotting Machines

Rhodes Mfg. Co., Hartford, Conn.

Spacing Washers

Detroit Stamping Co., Detroit, Mich.

Special Tools and Machinery

Bradford Machine Tool Co., Cincinnati, O.

Sloan & Chase, Inc., Newark, N. J.

Stecher Co., Cham., 2452 N. Greenview Ave., Chicago

Wade Tool Co., Waltham, Mass.

Sprockets

Massachusetts Gear & T. Co., Woburn, Mass.

Stamps, Steel and Rubber

Schwerdtle Stamp Co., Bridgeport, Conn.

Stencils, Brass and Oil Board

Schwerdtle Stamp Co., Bridgeport, Conn.

Stools and Chairs, Factory

Chicago Wire Chair Co., 619 N. La Salle St., Chicago

Straightening Machines

Springfield Machine Tool Co., Springfield, O.

Towley Mfg. Co., John T., Cincinnati

Whitney Metal Tool Co., Hockford, Ill.

Tap Extractors

Walton Co., Hartford, Conn.

Tapping Machines and Attachments

Alto Mfg. Co., 1547 Wolfram St., Chicago

Avery Drilling Machine Co., Cincinnati

Burke Machine Tool Co., Conneaut, Ohio

Eastern Tube & Tool Co., Inc., 580 Johnson Ave., Brooklyn, N. Y.

Leland-Gifford Co., Worcester, Mass.

Soan & Chase, Inc., Newark, N. J.

Whitney Metal Tool Co., Hockford, Ill.

Thread Dies

Colven, J. M., Yonkers, N. Y.

Thread Milling Attachments

Chaco Machine Tool Co., Cincinnati, O.

Classified Finding Index

Threading Machines

Kent Machine Co., Kent, Ohio.

Threading Tools

Armstrong Bros. Tool Co., 808 N. Francisco
Av., Chicago

Tool Holders

Armstrong Bros. Tool Co., 808 N. Francisco
Av., Chicago
Western Tool & Mfg. Co., Springfield, O.

Tool Racks

Chicago Wire Chair Co., 619 N. La Salle St.,
Chicago

Tools, Boring

Armstrong Bros. Tool Co., 808 N. Francisco
Av., Chicago

Tools, Lathe and Planer

Armstrong Bros. Tool Co., 808 N. Francisco
Av., Chicago

Tools, Machinists'

Armstrong Bros. Tool Co., 808 N. Francisco
Av., Chicago

Tools, Spot Facing

Genesee Mfg. Co., Rochester, N. Y.

Trucks, Machine Shop

New Britain Machine Co., New Britain, Conn.
Towsley Mfg. Co., John T., Cincinnati

Turntables

Carnton Foundry & Machine Co., Canton, O.

Universal Joints

American Tool Works, Inc., Hartford, Conn.
Horseman Mfg. Co., Inc., Torrington, Conn.
Boston Gear Works Sales Company, Norfolk
Downs, Mass.

Used and Rebuilt Machinery

Akron Equipment Co., Akron, O.
Bath & Co., Cyril J., Cleveland, O.
Bennett Mch. Co., 60 Church St., New York
Bernstein & Co., Geo. M., 549 W. Washing-
ton Blvd., Chicago
Bertolette Machine Tool Co., Inc., Jersey
City, N. J.
Brown Machinery Co., St. Louis, Mo.
Brownell Machinery Co., Providence, R. I.
Burns Machinery Co., F. W., Racine, Wis.
Carlson Machinery Co., Davenport, Iowa
Central-West Machinery Co., Cincinnati, O.
Cincinnati Mch. & Supply Co., Cincinnati, O.
Clark Machinery Co., Cleveland, O.
Colcord-Wright Mch. Co., St. Louis
Delta Equipment Co., Philadelphia, Pa.
Donahue Steel Products Co., 74th and
Ashland Ave., Chicago
Eastern Machinery Co., Cincinnati, O.
Emerson & Co., Louis E., 1781
Ave. Chicago
Easley Machinery Co., E. L., 555 Washington
Blvd., Chicago
Fitzsimmons-Cole Mch. Co., Pittsburgh, Pa.
Foster Machinery Co., Cleveland, O.
Hastten & Co., J. E., Inc., 50 Church St.,
New York
Harris Bros. Co., 35th & Iron, Chicago
Hill, Clarke & Co., 649 W. Washington
Blvd., Chicago
Hyman & Sons, Joseph, Philadelphia
Irwin Mfg. Co., H. R., Cincinnati, Ohio
Johnson, I. H. Jr. Co., Philadelphia, Pa.
Johnson & Sons Machinery Co., Wm. C.,
St. Louis, Mo.
Jones Machine Tool Co., Cincinnati, O.
Kinsey Co., E. A., Cincinnati, O.
Klauber Mch. Co., E. L., St. Louis
Little Co., W. P., Cleveland

Used and Rebuilt Machinery Continued—

McDonald Machinery Co., St. Louis
McMullen Mch. Co., Grand Rapids, Mich.
Marr-Galbreath Mch. Co., Pittsburgh, Pa.
Marsh Machinery Co., A. R., Cleveland, O.
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Chicago
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Morey and Co., Inc., 408 Broome St., N. Y.
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Nelson Machinery Co., Green Bay, Wis.
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Oviatt & Co., D. C., Cleveland, O.
Pattison Supply Co., W. M., Cleveland, O.
Peunimular Machinery Co., Detroit, Mich.
Prentiss & Co., Henry, 149 Broadway, N.Y.
Purinton & Smith, Hartford, Conn.
Randle Machinery Co., Cincinnati, O.
Reeve-Fritto Co., 37 S. Desplaines, Chicago
Reliance Mch. Sales Co., Pittsburgh, Pa.
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Saverin-Tripp Machinery Co., 25 Church St.,
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Seyfert's Sons, L. F., Inc., Philadelphia, Pa.
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Stocker-Rumely-Wachs Co., 117 N. Jefferson
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Stoehr Machinery Co., A. M., 418 Mid-City
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Warne Machinery Co., Ft. Wayne, Ind.
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Wickes Machinery Co., Jersey City, N. J.
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Armstrong-Bium Mfg. Co., 341 N. Francisco
Av., Chicago
Armstrong Bros. Tool Co., 808 N. Francisco
Av., Chicago
Demco, Incorporated, Baltimore, Maryland.
Martin Tool & Die Works, J.E., Springfield, O.

Vises, Machinists'
New Britain Machine Co., New Britain, Conn.
Western Tool & Mfg. Co., Springfield, O.

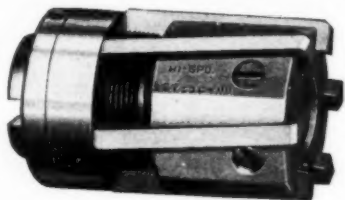
Vises, Milling Machine
Hartford Special Mch. Co., Hartford, Conn.

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"X-L" Adjustable Inserted Spiral Blade Shell and Machine Reamer



Reamers made with Left Hand Angle Cutting Blades do not dig in, and all chatter is eliminated. This means free, clean cutting, smooth holes, and increased production.

The range of expansion is from .100" in the smaller sizes to .150" in the larger sizes. Made with High Speed Steel Blades.

This is a real production reamer.

The left hand helical flutes cut fast and clean. Made only in high speed steel. Made with straight and tapered shanks.



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Used and Rebuilt Machinery Section

Lists of Used and Rebuilt Machinery, either For Sale, Wanted or For Exchange, set in uniform style, will be published in the Classified Section at the rate of **50 cents a line**, across the page, each issue, plus **\$2.50** for name and address. Minimum charge, **\$5.00**. No display permitted.

Write directly to those offering the machines for sale for prices and full descriptions. If what you seek is not advertised, use the blank enclosed to make known your wants to the publisher, who will pass them along to all Machine Tool Blue Book advertisers.

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Purinton & Smith, - - - - - **Hartford, Conn.**
Grinder, surface, vertical type, 14" Pratt & Whitney, with ball bearing spindle and magnetic chuck.
Grinder, surface, Brown & Sharpe No. 2, with magnetic chuck.
Lathe, 18"x8" Lodge & Shipley.
Presses, No. 18 Bliss, (25).
Scrap baler, Stanley.

FOR SALE BY

Colcord-Wright Machinery & Supply Co.
1223-29 North Broadway, - - - - - **St. Louis, Mo.**
Automatic, No. 00 B. & S., (3).
Automatic, No. 0 B. & S.
Boring mill, 30" Gisholt, m. d.
Grinder, No. 1 B. & S. universal.
Pipe machine, 12" Curtis.
Planer, 24x24x6' Ohio.
Planer, 42x36x12' Cleveland openside.
Press, P4 Ferracute.
Punch, style M6 Rock River.

FOR SALE BY

The Akron Equipment Company, - - - - - **Akron, Ohio**
Automatic, 4-spindle, 1½ capacity Acme, serial 9201.....\$ 225.
Engine lathe, Fitchburg, 13"x6", not screw cutting, chuck.....55.
Engine lathe, Blaisdell, 14"x6", c. s., c. r., taper att., chuck.....95.
Engine lathe, Fish, 39"x23", raising blocks to 46", c. s., c. r., and extra rest at rear, chuck jaws.....650.
Threading machine, 2-spindle, 1" capacity, National Acme.....125.

FOR SALE BY

Bennett Machinery Co., - - - - - **30 Church St., New York City**
Lathe, 28/48"x18" McCabe, dbl. spdl.
Lathe, 24"x10" LeBlond, q. c. g.
Lathe, 20"x15" Reed, 11" centers.
Lathe, 18"x10" Flather, q. c. g.
Lathe, 18"x8" Greaves-Klusman, grd. hd., q. c. g., sgle. pulley, late type.
Pipe machines, 12" Cox, belt; 6" Saunders, mtr.; 4" Bignall & Keeler, motor; 4" C. & C.
Shapers, 24" G. & E.; 26" Juengst; 16" Cincinnati; 15" Kelly; 15" Potter & Johnston, universal.

FOR SALE BY

McMullen Machinery Company, - - - - - **Grand Rapids, Mich.**
Cold saw, No. 4 N. & B.
Drill press, 20" all geared.
Drill, press 14" Barnes, 3-spl., power feed.
Furnace, No. 200 Crucible.
Grinder, No. 6-A Bryant.
Grinder, Gisholt universal.
Grinder, No. D-4-T G. R. drill.
Lathe, 24x26 Greenlee turret.
Milling mach., No. 3 Kempsmith pl.
Milling machs., No. 25 Becker pl., (2)
Press, No. 3 Manville dbl. action.
Shear, No. 14 Pettingell.
Unishear, style "A"

USED AND REBUILT MACHINERY

FOR SALE BY

Herman L. Winterer,

943-53 N. Front St., Philadelphia, Pa.

LATHES.

43"x17' 4 1/2" Bement-Miles.
37 1/2"x14' Johnson d. b. g., q. c. f., t. a.
32"x12' Pittsburgh, heavy duty, q. c. g.
32"x15' American, cone type.
27"x12' Bullard.
26"x11' Wickes, q. c. g.
26"x10' 6" Walcott, q. c., d. b. g.
23"x10' Niles, q. c. g.
21 1/2"x8' LeBlond.
19"x10' Draper, patent head.
18"x10' Rahn-Larmon, q. c. g., taper.

18" x 7' Chard, d. b. g., semi q. c. g.
18"x 6' South Bend, plain change.
18"x6' to 8' lathes, (6).
16"x 6' American, q. c., pan bed, t. a.
15"x 8' Sidney, q. c., d. b. g., t. a.
14"x 6' Springfield, latest type, tool room type, t. a.
14"x 6' Lodge & Shipley, patent head, taper, pan bed.
14"x8', 14"x6' Lodge & Shipley, q. c.

TURRET LATHES.

3 1/2"x28" Pond, triangle.
3x36" Pratt & Whitney, hollow hex.
20x7' Bridgeport, 2 1/2", h. s.
19"x7' Fay & Scott, back grd.
No. 224 Garvin Monitor.
14"x 6' Warner & Swasey.

No. 3 Foster ac. machines 1-5/16" wire feed, (2).
1 1/2"x9" Cincinnati-Acme, wire feed.
No. 4 B. & S., bar feed, all auto. fds.
No. 2 Smurr & Kamen, wire fd., (5).

DRILL PRESSES.

48" Almond, sensitive radial, column and base.
48" Almond, sens. radial, post type.
40" Barnes horizontal radials, (2).
26" Rockford, tapping attachment.
26" Aurora, sliding head.

34" Barnes, s. h., grd. fd., comp. tbl.
24" Foote-Burt heavy duty.
21" Aurora, b. g., p. f.
20" Sibley, back geared.
20" Prentice, plain, (3).
No. 14 Knight milling & drilling mch.

MILLING MACHINES.

No. 5 Cincinnati, table 9 1/2"x50 1/2".
No. 5 Brown & Sharpe vertical.
No. 3 Brown & Sharpe, plain, cone type.
No. 3 Hendey, q. c. g.

No. 1 Van Norman hand miller.
No. 3 Becker-Brainard, new model, q. c. g., vertical attachment.
No. 5-C Becker vert., rotary table.
No. 3 Rockford hand, power feed.

PLANERS AND SHAPERS.

48"x37"x9' Sellers, 2 heads.
45"x45"x12' Gray, 2 heads.
42"x36"x14' Cincinnati, 4 heads.
36"x36"x12' W. & P., 3 hds., m. d.
23" Woodward & P., crk., gear box.

48" Morton draw-cut shaper.
30"x30"x8' American, 1 head.
15" Lodge & Davis shaper.
21" Milwaukee, b. g.
24" Gould & Eberhardt, b. g.

BORING MILLS.

24" Bullard, rapid production.
Boring mill, car wheel, 60" Newton.
42" Bullard, 2 swivel heads, (2).

Boring, drilling and milling machine, 17 1/2" Bement Miles horiz.
Boring mill, No. 1 Sellers hor., 2 1/2" bar.

PIPE AND BOLT MACHINES.

14" National, bolt, m. d.
1 1/2" Acme, bolt, belt drive.
4" & 8" Eaton, Cole & B., pipe.

6" Cox, quick opening dies.
4" Armstrong, No. 00 pipe machine.

FOUNDRY EQUIPMENT.

No. 90 L. B. Pangborn automatic sand blast, with No. 10 Pangborn double section tank; and type "00"
No. 3 dust collector.
Tabor, split pattern power squeezers, 16" cyl., 17 1/2"x23 1/2", 4" draw, (2).

Millett stationary core oven.
Tabor, split pattern power squeezers, 13" cyl., 14 1/2"x21", 4" draw, (8).
30" Tabor shockless jarring roll-over molding machines, 12" draw, cap. 1200 lbs.

MISCELLANEOUS.

Arbor press, No. 8 Greenerd, 36" bet. columns.
Brake, 60" D. & K., pan or box.
Centering mche., 5" Whiton, dbl. sp.
Cold saw, No. 6 Nutter & Barnes.
Elec. hoist, 1-ton Link Belt, 2 ph. a. c.
Electric hoist, 1-ton Shepard, 220 v., d. c., (2).
Grinder, No. 8 Diamond, double end, heavy type, (3).

Generator, No. 100 Oxweld acetyl.
Grinder, 13 1/2"x5" Landis universal.
Grinder, disc, No. 17 Besly.
Grinder, No. 7 Gardner disc, ball bearing, complete.
Grinders, several dbl. end electric.
Grinder, Dumore tool post, int. att.
Hammers, 15, 25 & 40 lbs. Bradley helve.
Hammer, 60 lb. Hotchkiss.

USED AND REBUILT MACHINERY

Herman L. Winterer—Continued.

Hammer, 60 lb. Little Giant, belt dr.
Hammers, 60 lb. Bellefonte upright, 2.
Hammer, No. 2-B Nazel, m. d.
Keyseater, Morton 18" stroke.
Keyseater, No. 4 Catlin, m. d.
Tire press, hyd., 60-ton Defiance.
Punch or gate shears, 72" Cleveland
multiple, 15" throat.
Punch press, No. 10 Bliss mult.
Punch press, No. 4 Toledo, flywheel.
Punch press, No. 2 Cons., flywheel.
Punch presses, all sizes, (55).
Punch, No. 2 H. & J., 15" th., arch.
jaw, 1 1/2" in 1".
Punch & shear, No. 2 H. & J., dbl.
end, 20" th. cap., 1 1/2" in 1".
Punch & shear, No. 4 Long & A.,
double end, 24" throats.

Punch, horiz., L. V., grd., cap. 1".
Punch & shear, Oeking combination,
cast steel frame, cap. 1 1/2" in 13/16".
Riveter, 3/16" Grant, on column.
Riveter, air, 6" gap Allen, cap. 1 1/2".
Riveter, air, 6" Allen, cap. 1 1/2".
Riveter, stake, No. 6 Whiting, 60" th.
Saw, No. 7K Atkins Kwick-Kut.
Saw, O. M. & S. No. 4-B universal,
33" blade.
Shr., No. 230 Niagara pwr. sq., m.d.
Shear, 52" P. S. & W. pwr. squaring.
Shear, squaring, 48" Ohl, 3/16" cap.
Shear, 8" Ohl, No. 20 ga.
Slotter, 14" Niles.
Slotter, 3 1/2" Rhodes vertical.
Tooth rounding machine, S. & S.
Woodworking mch., Sidney comb.

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Syracuse Supply Company. 314 W. Fayette St., Syracuse, N. Y.

Guaranteed NEW MACHINES in original crates at prices below list:
Automatic, 2 1/2" Gridley, single spdl.
Pipe machine, No. 70 Forbes.

Exceptional values in USED TOOLS:

Automatic, 1 1/2" model A., Cleveland.
Drill press, 4-spdl. National sensitive.
Drill press, 22" Prentice, rebuilt.
Grinder, 24" Safety Emery Wheel
Co. snag grinder.
Grinder, surface, No. 2 Reed.
Grinder, Taylor & Fenn 20".
Lathe, 16"x 8" American, geared
head, rebuilt.
Lathe, 16"x 10" American.
Lathe, 20"x 12" Reed.
Lathe, 8x60 Fitchburg lo-swing.
Miller, No. 5 Becker vertical.
Miller, Oesterlein universal.
Millers, Wisconsin hand, (3).

Screw mchs., No. 4 W. & S., g.f.h., (2).
Straightener, No. 2 1/2 Corey.

Planer, 30"x 30"x 16" L. W. Pond.
Planer, 60"x 60"x 22" Niles.
Radial, 5" Pond.
Shaper and slotter, No. 1 Rhodes.
Thread miller, No. 12 Lees Bradner.
Tilted turret, No. 6 Wood.
Turret lathes, No. 4 Foster, (2).
Turret lathe, No. 2 Warner & S.,
hollow hex.
Turret lathe, No. 3 Cincinnati Acme.
Turret lathe, 2 1/2"x 26 Pratt & Whitney.
Turret lathe, 3x36 Jones & Lamson.
Turret lathe, 2x24 Jones & Lamson.
Turret lathe, 21" Gisholt.
Turret lathe, 24" Steidle.

FOR SALE BY

W. P. Little Co., West 9th & Front Sts., Cleveland, Ohio
PLANERS.

26"x 26"x 8' Gray, (2). 32"x 32"x 14' Pond, two heads.

POWER HAMMERS.

Beaudry, 50 pound. Bradley, 50 pound upright compact.

PUNCH PRESSES.

E. G. 22 Ferracute, geared, arch. Z. & H. cam-drawing press.

GEAR SHAPERS.

24" Fellows gear shapers; no reasonable offer refused, (2).

GRINDERS.

No. 60 Heald cylinder, 36" table. 8" Heald, rotary surface.
No. 76 Heald internal. No. 60 Bryant chucking.
No. 1 LeBlond tool and cutter. Greenfield tool and cutter.

MISCELLANEOUS.

Bolt cutter, 1/2" Landis. Radial, 3" Bickford, cone drive.
Cold saw, 20" Burke. Spline miller, 2" Pratt & Whitney.
Nut tapper, 1" Acme, dbl. reversing. Wiring machine, No. 1 Magee.

Partial list; send us your inquiries; 150 other tools in stock.

USED AND REBUILT MACHINERY

FOR SALE BY

Foster Machinery Company,

Band saw, 24" Woods.
Bolt cutter, 1½" Acme.
Boring mill, vertical, 42" Bullard.
Lathe, 16"x6" Monarch.
Miller, No. 00 Brown & S., hand.
Punch, EF Cleveland, cap. 1½x1", motor drive.

10203 Quincy Ave., Cleveland, O.

Press, No. 3 Stiles.
Riveter, High Speed 2A.
Shear, alligator, Canton, cap. 14" sq.
Shear 12"x14 ga., Loy & Nawrath.
Shear, 36"x18" gap, foot.
Shear, 48"x4" Bertsch, 24" throat.
Trolleys, I-beam, 1 & 2 ton.

FOR SALE BY

B. L. Saltzman,

Bolt threader, Geometric 14".
Boring mill, No. 1 Barrett.
Drills, Cincinnati b.g., taper att., 20".
Drill, Fox multi-spindle.
Gear hobber, No. 5-A Lees-B.
Gear generators, No. 6 & 11 Gleason.
Grinder, No. 60 Heald internal.
Grinders, Taylor & Fenn cylinder.
Lathe, D. & W. Pond 16"x7".
Lathe, Lodge & Shipley 16"x10".
Miller, No. 5 LeBlond.

{ 809 W. Lake Street, Chicago, Ill. { 524 W. Van Buren St., Chicago, Ill.

Punch presses, Bliss, (Stiles type), No. 2½; No. 4 V. & O.; No. 4 Walsh; Nos. 2 & 3 American Can.
Screw machines, Bardons & Oliver No. 4.
Screw machines, Foster No. 6.
Screw machine, No. 3½ Gridley.
Screw mchs., Warner Swasey No. 6.
Screw machines, Warner & Swasey, hand, Nos. 1 & 2.
Shapers, 12", 16" & 24".

Motors and Generators—Factory Transmission.

FOR SALE BY

Henry Prentiss & Co., 439 Communipaw Ave., Jersey City, N. J.

Bolt cutter, 2" Acme, double head.
Bolt header, 2½" Acme.
Boring mill, 24" Bullard, New Era.
Boring mill, 42" Bullard, power rapid traverse.
Boring mill, 102" Poole.
Boring mill, No. 1 Lucas horizontal.
Broaches, Nos. 1, 2 & 4 Lapointe.
Drill, No. 14 Avey 2-sp., b b., bench.
Drills, 24" & 32" Cincinnati.
Drill, No. 25 Foote-Burt high speed, ball bearing.
Drill, 3" Morris radial, s. p., g. b.
Drill, 4" American triple purpose rad.
Drill, 4" Carlton plain radial, t. and l. pulley, gear box.
Drill, 5" Drees radial, s. p., b. b.
Drill, 6" Cincinnati-Bickford plain radial, s. p., g. b.
Drill, 11" Lynd-Farquhar (wall).
Drill, No. 30 Natco multi spindle.
Drill, 26" Barnes all-grd., 4-spindle.
Gear cutter, 6" Gleason generator.
Gear cutter, 36 BM. Gould & E.
Grinders, 3"-6"-10" Norton plain.
Grinder, 12" Cincinnati universal.
Grinder, No. 2 Norton cutter & tool.
Grinder, No. 60 Heald cylinder.
Grinder, No. 65 Heald cylinder.
Grinder, 14" Pratt & W. surface, b.b.

Grinder, No. 6 Bealy disc.
Lathe, 14"x10" L. & S., s. p. or m. d.
Lathe, 16"x 6" Lodge & Shipley.
Lathe, 17"x16" LeBlond.
Lathe, 16"x 8" LeBlond.
Lathe, 20"x12" American, s.p. or m.d.
Lathe, 24"x10" Lodge & Shipley.
Lathe, 30"x12" L. & S. s. p. or m. d.
Lathe, 36"x24" Putnam, geared head, s. p. d., late type.
Lathe, 38"x20" Schumacher-Boye.
Lathe, 26"x44"x16" McCabe, dbl. sp.
Planers, 24"x 6 & 8" Ohio.
Planer, 30"x10" Flather.
Planer, 36"x10" Woodward & P.
Planer, 48"x12" Powell.
Planer, 60"x44"x12" Pond.
Planer, 72"x54"x20" Pond.
Press, No. 2½ Billings & Spencer trimming, slide cutting attach.
Presses, Nos. 3 & 5 V. & O. incl.
Press, No. P. G. 2 Ferracute.
Screw machines, auto. 4", 3½", 4½" Gridley.
Screw machines, auto. 4", 4", 11", 24", 44", 6" Cleveland; 16" G. & E.
Shapers, 16", 20" & 24" Cincinnati.
Shaper, 20" American.
Turret machines, 14", 24", 3½" Acme.
Turret machines, 24" & 3½" J. & L.

Partial list only. Inquiries addressed to
439 Communipaw Ave., Jersey City, N. J. will receive prompt attention.

USED AND REBUILT MACHINERY

FOR SALE BY

Chas. Molitor Machinery Co., 115-124 S. Clinton St., Chicago, Ill.
LATHES.

21"x10' LeBlond, q. c. g., t. a.
18"x10' Boye & Emmes, q. c. g.
18"x8' Boye & Emmes, q. c. g.,
taper, draw, collet attachment.
18"x9' Chard, q. c. g., taper, draw.
18"x8' Sidney, quick change grs.
18"x8' American, q. c. g., taper, re-
lieving attachment.
16"x8' Hendey, q. c. g., taper, collets.

14"x6' Bradford taper, draw collets,
relieving attachment, q. c. g.
14"x6' LeBlond, quick change gear.
30" LeBlond, q. c. g., turret attach.
14"x6' Hendey taper, draw collets.
24"x8' Lodge & Shipley, q. c. g., taper.
16"x8' LeBlond, q. c. g.
Warner & Swasey, double key.

MILLERS.

3" Giddings & Lewis horizontal.
Beaman & Smith vertical & horiz.
Nos. 2 and 2½ Rockford universal,
vertical attachment.

No. 3 B. & S. univ; No. 3 B. & S. plain.
No. 3 Kempsmith plain.
No. 34 Oesterlein, heavy duty, rapid
production.

SHAPERS.

14", 16", 18" crank, plain.
No. 16 Hendey, geared crank.
24" Gould & Eberhardt, grd. crank.

24" Hamilton heavy, grd. crank.
20" Gould & Eberhardt, grd. crank.

RADIALS AND DRILL PRESSES.

5-spindle Henry & Wright, hi-sp.
6-spindle Leland Gifford, ½" cap.
36" American, light pattern.
3½" American, light pattern.
3 American, sensitive.
24" Becker Bros., No. 310.
6-spindle Sipp, ½" capacity.
5-spindle Henry & Wright, ½" cap.
2-spindle Henry & Wright, 1" cap.

1-spindle Sipp with comp. table, (2).
30" Superior, Aurora sliding head.
28" Aurora sliding head.
26" & 24" Superior, Aurora slid. hd.
Foote-Burt, sliding head, 3" cap.
Knight drilling & milling machine.
50 different sizes, high speed and
sliding head drills.

GRINDERS.

7½ h. p. Ring, disc grinder.
Bryant internal and chucking, (4).
No. 2 Norton universal.
Nos. 2 & 3 Oakley universal.
Cincinnati univ., 4"x57" table.
12"x72" Brown & Sharpe univ.
No. 2 Brown & Sharpe surface.
40 Brown & Sharpe, Norton, Oakley,
cylindrical grinders.

No. 12 Brown & Sharpe cylindrical.
8"x32" Norton cylindrical.
12"x50" Landis cylindrical.
6"x18" Landis self-contained.
10"x30" Landis cylindrical No. 1½.
8" Heald ring grinder, mag. chuck.
Nos. 4 & 120 Gardner ball bearing.
Landis, Heald, universal, plain and

SCREW MACHINES AND TURRET LATHES.

Jones & Lamson, single spindle.
Nos. 2 & 4 Warner & S. pl. & grd.
No. 6 Warner & Swasey, b. g., fr. hd.
No. 6 Foster, power long. & cross.
6-spindle New Britain, 1½" cap.
Large variety, W. & S., Brown & Sharpe, plain, semi-automatic, and auto-
matic, Acmes, B. & O., Foster, etc., screw machines.

1" & 1½" cap. Acme, b. g., frict. h.
Nos. 0, 1, 2, 3 Foster and B. & O.
16"-18" Fox turret lathes, fric. hd.
No. 4 Brown & Sharpe, b. g., fric. hd.

PUNCH PRESSES AND SHEARS.

No. 19 Bliss inclined, flywheel.
No. 5 Niagara incl., flywheel.
No. 33P Toledo.
No. 51 Toledo, 6½" stroke.
No. 71 Toledo double crank.

8' Toledo power square shear.
No. 5 Toledo geared.
Emco bench type, (3).
½" capacity slitting shears.

MISCELLANEOUS.

Balancing machine, motor attached.
Bolt cutters, 1" & 1½" Landis, (3).
Bolt cutters, ½" & 1" Acme, (2).
Broaching mch., Nos. 1, 2 & 3 LaPointe
Die slotter, Garvin.
Gear cutter, No. 13 B. & S., bevel & s.

Gear cutters, Waltham auto., (4).
Keyseater, No. 2 Davis.
Magnetic chucks, etc.
Riveter, No. 1 Shuster, 3/16".
Tappers, ½" R.-Shafer; ½" P.-W.

USED AND REBUILT MACHINERY

FOR SALE BY

Clark Machinery Co., 1235 St. Clair Ave., Cleveland, O.

Lathe, 24"x16" Schumacher & Boye.
Milling machines, universal and plain.
Planers, 28"x28"x8' and 42"x42"x8' Gray, 2 heads.
Radial drills, 3' American and 3' Prentice.
Screw machines, No. 4 and No. 6 Warner & Swasey.
Shapers, 16" Ohio and 20" Whipp, b. g.
Spinning lathes, Prybil 18".

FOR SALE BY

I. H. Johnson, Jr. Co., 1434 Callowhill St., Philadelphia, Pa.

We are retiring from the manufacture of machine tools and offer all our equipment for sale. Some of the exceptional bargains are:

Lathe, 28"x12" Putnam, heavy duty, belt drive.
Planer, 60"x60"x24' Sellers, 4 heads, belt drive, photo on request.
Radial drill, 2 1/2' American plain, single pulley drive, tapping attachment.
Radial drill, 4' Western plain, belt drive.
Shaper, 24" Steptoe back geared, belt drive.
Traveling crane, 20-ton P. & H., 3-motor, 30' 6" span.

Send for list of all available machinery; you will find many desirable items.

FOR SALE BY

Reliance Machinery Sales Company

1405 Brighton Road, N. S. Pittsburgh, Pa.

Automatics, Nos. 52, 53 & 55 Acme.
Blower, No. 5 Champion, 6 1/2" outlet.
Blower, Amer. pressure, 461 cu. ft.
Bolt cutter, 3/4" Acme, class "A", 2-sp.
Boring mill, No. 44 D. & H., floor type, 3 1/2" bar.
Boring mill, Niles horiz., 4 1/2" bar.
Boring mill, 34" Colburn, 1 head.
Boring mill, 42" Bullard, 2 heads.
Boring mill, 51" Niles, 2 heads.
Boring mill, 62" Bullard, 2 heads.
Brake, 48" Keane, capacity 1/2".
Broaches, Nos. 3 and 4 LaPointe.
Buffers, 10 h. p. 220-3-60, 3600 r.p.m.
Bulldozers, No. 4 Williams & W.
Drills, 26" Barnes, sliding head.
Drills, 36" Snyder, sliding head.
Gear cutter, 36"x10" G. & E., s. p. d.
Grinder, Oliver drill, 1/2" cap., m. d.
Grinder, w. p. New Yankee, cap. 2 1/2".
Grinders, Nos. 11 & 12 B. & S. pl.
Grinder, 12"x24" Modern plain.
Grinder, No. 16 Besly, double disc.
Hammer, 2-A High Speed, m. d.
Hammer, 80 lb. Bradley cush. helve.
Hammer, 300 lb. Bradley upright.
Keyseater, No. 3 Mitts & Merrill.
Lathe, 12"x 6" Seneca Falls.
Lathe, 12"x10" Davis tool rm., q. c. g.
Lathe, 14"—28" Fay & Scott gap.
Lathe, 14"x 6" Seneca Falls, q. c. g.
Lathe, 16"x 8" Hamilton, q. c. g.
Lathe, 18"x 8" American, g. h., m. d.

Lathe, 18"x9" L. & S., q. c. g., m. d.
Lathe, 18"x10" W.-B., g. h., s. p. d.
Lathe, 20"x10" Hendey, g. h., m. d.
Lathe, 20"x12" Hendey, tie bar.
Lathe, 24"x12" Boye & Emmes, q. c. g.
Lathe, 30"x12" Boye & Emmes, q. c. g.
Miller, No. 1 Knight drilling.
Miller, No. 1 1/2 American plain.
Motor, 5 h. p. Wagner, 220-1-60.
Pipe machine, 1/2" to 2" Williams.
Pipe machine, 8" Cox, cap. 2 1/2" to 8".
Pipe machine, Merrill, 2 1/2" to 12".
Planer, 30"x30"x12" Gray, 1 head.
Planer, 36"x36"x8" Cincinnati, 1 hd.
Planer, 36"x36"x10" D. & H., openside
Planer, 48"x48"x12" Betts, 3 heads.
Press, No. 19 Bliss, o. b. i., flywheel.
Press, 30-ton Lucas forcing.
Press, Ferracute DD2, o. b. i., cam.
Press, No. 54 Toledo trimming.
Punch, Royersford d. c., cap. 1"x 1 1/2", arch. jaw, 18" throat.
Punch, Wickes, 48" thrt., cap. 1 1/2"x1".
Radial drill, 6" Bickford plain.
Saws, No. 5 Marvel high spd., 6x6, (2).
Saw, Racine 6x6 high speed.
Saw, 9"x9" Peerless high speed.
Saw, American metal swing, m. d.
Shaper, 24" Cincinnati, b. g. crank.
Shear, 96"x16 ga. Stoll squaring.
Shear, 120"x 1 1/2" Garrison squaring.
Tapper, 1/2" Webster & Perks, 1-spdl.
Tapper, 1 1/2" Webster & Perks, 2-spdl.

Our warehouse is full of bargains. What have you for sale?

USED AND REBUILT MACHINERY

FOR SALE BY

Schmitz & Co.,

35 S. Clinton St., Chicago, Ill.

Drill presses, Avey, Mason h. s.
Hack saw, power Marvel No. 1.
Lathe, 24"x12' Lodge & S., q. c. g.
Lathe, 20"x20' American.
Lathe, 11"x 5' Barnes.

Milling machine, No. 2 Cincinnati.
Mortiser, Greenlee, 24" capacity.
Polishing lathes, Brown & Sharpe.
Punch press, Farrell, 8" stroke.
Riveting, No. 3 W. & W., 7/16" cap.

FOR SALE BY

Wm. C. Johnson & Sons Machinery Co.,

1211-1223 N. 12th St.,

St. Louis, Mo.

LATHES.

15"x 6' Monarch, q. c. g.
18"x 8' LeBlond, q. c. g.
20"x 8' Flatther, q. c. g.
20"x20' LeBlond.
24"x10' Lodge & Shipley, sel. hd.

26"x12' Putnam.
27"x12' LeBlond heavy duty, q. c. g.
38"x14' Pond, triple geared.
60" New Haven turning, 7' centers.
54"x20' Niles triple geared.

VERTICAL BORING AND TURNING MILLS.

42" Niles, 2 heads.
42" Bullard, 2 heads.
54" Baush, 2 heads.

54" Niles, 2 heads, heavy duty.
8' Niles, 2 heads.

MILLING MACHINES

No. 24B Milwaukee vertical.
No. 3 Rockford, hand.
No. 14 Brown & Sharpe.
No. 3 Cincinnati plain.
No. 5 Brown & Sharpe.

No. 4 Cincinnati plain.
Owen duplex.
No. 25 Becker.
No. 12 Kempsmith.
37"x30"x8' Ingersoll slab.

DRILLING MACHINES.

20" Champion.
22" Barnes, sliding head.
3-spindle Allen, h. s.
3' arm Drees radial.

4' arm Drees radial.
5' arm Drees radial.
6' arm Cincinnati-Bickford radial.

PLANERS AND SHAPERS.

10"x7'x25' Detrick & Harvey planer.
24"x34"x 6' Powell planer.
30"x30"x8' Belmer.
42"x42"x12' Powell.

48"x48"x12' Niles, 2 heads.
20" Gould & Eberhardt, b. g. crank.
24" Cincinnati crank.
24" Cincinnati crank motor-driven.

GRINDERS.

Schmidt automatic.
No. 50 Gardner disc.
8" Heald rotary, magnetic chuck.
10"x12" Brown & Sharpe plain.

No. 1 Diamond surface.
No. 2 Walker universal.
No. 1 Fraser surface.
5"x18" Ott.

SCREW AND TURRET MACHINES.

2"x24" J. & L., geared head.
3"x36" J. & L., geared head.
14" Acme.

No. 1 Pratt & Whitney, (2).
No. 6 Warner & Swasey.

GEAR CUTTERS.

No. 1 Schuchardt & Schutte.
No. 1 Farwell hobber.

24" Whiton bevel and spur.
26" Brown & Sharpe spur.

PRECISION TOOLS.

No. 1 Dayton swaging machine.

No. 34-7" swing Stark bench lathes.

MISCELLANEOUS.

Air compressors, (12).
Belt lacer, 12" Peerless.
Boring mche., hor., No. 2 P. & H.
Boring mche., hor., No. 3 Niles.
Furnaces, Stewart cyanide hardening
Hammer, Bradley 60 lb., belt power.
Hammer, Morgan 600 lb. steam.
Hammer, 900 lb. steam.
Hammer, 2000 lb. Niles-B. steam.
Hammer, 2500 lb. Chamb. steam.
Metal saw, Espen-Lucas 31".
Pipe mche., 6" Bignall & Keeler.

Pipe mche., 8" Bignall & Keeler.
Press, No. 16 Stoll inclinable.
Presses, No. 19 Bliss.
Punch, 48" thrt. Hilles & Jones.
Punch, No. 7 Long & A., 4" throat.
Punch, 36" throat, single end.
Shear, 62", 18" gap, No. 10 ga.
Slotter, 13" Niles.
Taper rolling mche., No. 2 Hess.
Wheel press, 40", 150-ton
Wheel press, 45", 150-ton Niles.

USED AND REBUILT MACHINERY

FOR SALE BY

A. M. Stoshr Machinery Co., 418 Mid-City Bank Bldg., Chicago, Ill.

Bolt cutter, 1" Acme, 3-spd.
Boring mills, 20" Bullard; 60" & 12"
Niles; all have 2 heads.
Brake, 8' Dries & Krump, 10 gauge.
Compressors, 12 different sizes.
Corrugating outfit, Bertsch corruga-
tion shear and Robinson corruga-
ting rolls.
Furnaces, melting, for soft metal and
aluminum, also cyanide.
Gear cutter, 60" Gould & Eberhardt.
Lathes, 18x8 Barnes, hvy. duty; 11"
Rockford; and others.
Milling machines, plain & universal;
also No. 20 Van Norman, duplex.

Oil extractors, centrifugal, (8).
Punch presses, No. 16 Bliss horning;
No. 34 Bliss arch., and others.
Punch & shears, No. 3 Long & A.,
d. e., 4" thru 4"; No. 14 1/2 W., d. e.,
15" throat; No. 5 Long & A., d. e.
Riveters, Nos. 2-A, 3-A, 4-A & 5-A
High Speed; No. 8 Stimpson auto.,
for split grommets & eyelets rivets.
Saws, 9x9 Sterling high speed; 12"
band, and others.
Screw machines, (2); Nos. 52 & 53
Acme; other plain and automatic.
Welders, both spot and butt.
Wire straightening machines, (5).

FOR SALE BY

Tuber, Velick & Co., Inc., - 628-630 W. Lake St., Chicago, Ill.
Telephones: Monroe 4199-6813. No Branches

PUNCH PRESSES.

No. 4 American Can.
No. 0 V. & O.
No. 6 Niagara geared.

18-C Bliss.
No. 19 Bliss.
Swaine geared, (2).

DRILL PRESSES.

20" b. g., p. f., new, \$130.
1-sp. Leland-Gifford high speed, (3).
Bench type drills.

3 1/2' Bickford radial.
3' American radial.
4' Ryerson radial.

MILLING MACHINES.

No. 2 Cleveland universal, s. p. dr.
No. 2 Rockford plain.

Cincinnati 3-S, s. p. drive.
A number of hand millers.

LATHES.

16"x 6' Sidney, q. c., (2).
16"x 8' Monarch, q. c.
17"x 9' Chard, q. c., (9).
18"x 6' Lehmann, q. c., (2).
24"x10' Canadian, q. c., d. b. g., (3).

22"x10' Cisco, q. c.
24"x10' LeBlond, extra turret att.
10", 12" and 14" Shepard screw cut-
ting, quick change.

PLANERS.

30"x30"x12' Niles-B.-P., 2 heads.

36"x36"x 7' Flather, 2 heads.

SCREW MACHINES.

B. & S. No. 00 automatics serials
2100 to 4300.
No. 3 Superior.

No. 1 Foster.
No. 2 Smith, hand.
Pratt & Whitney, hand, (3).

GRINDERS.

Emery grinders, \$2 and up.

WOOD-WORKING MACHINERY.

Boring mills, Andrew, (3).
Moulders, 8" Yates C-4, (2).
Shapers, Advance dbl. spdl., 5 h. p.,
a. c. motor in base, (6).

Shapers, double spindle, Whitney
and Fay.
Swing saws, Porter, (4).
Saw table and jointer combined,
portable.

MISCELLANEOUS.

Boring mill, 36" Colburn.
Hack saws.
Motors, 75 h. p. G. E., a. c. slip ring,
600 r. p. m., (2).
Motors, a. c. and d. c.
Pressed steel hangers and bearings,
all sizes.
Pressed Steel stools, with backs.
Saw mandrels, \$3.

Shapers, Ohio 24", (2).
Shaper, 15" American, b. g.
Shaper, 20" Walcott, b. g.
Shear, 6' power, direct drive, a. c.,
14 gauge.
Shear, No. 196 Niagara 8', power.
Shears, sgr., Streine 3', new, power.
Time clocks, International.
Woodworking machines.

Leather belting. Pulleys, shafting and hangers.

USED AND REBUILT MACHINERY

FOR SALE BY

Nelson Machinery Co.,

Bolt cutter, 2" Acme, style A, sgl.
 Drill, American 4' radial.
 Drill, Barker 25", sliding head, new.
 Gasoline engine, 40 h.p. DuBois hor.
 Hack saw, Peerless 9x9, belt drive.
 Lathe, Gardner No. 4 polishing, b.b.
 Lathe, 28"x18" New Haven, h. s.

123 N. Pearl St., Green Bay, Wis.

Lathe, 14"x 8' Prentice Bros., q. c.,
 single pulley drive.
 Miller, Kempsmith No. 2½ plain.
 Punch & s., Royersford No. 3 dbl.
 Punch & shear, single, W-W No. 14.
 Riveter, Hanna 50-ton, pneumatic,
 at 100 lbs. pressure, 10' throat.

FOR SALE BY

A. F. Strafer,

30 Church St., New York City

BORING MILLS, VERTICAL.

10'-16" Niles-Bement-Pond.
 16'-32" Niles extension type, b. d.
 14'-20" Betts extension type, b. d.
 90" Niles 2-heads, belt drive.
 64" Betts 2-hds., heavy, belt or m. d.

60" Bullard, single pulley drive.
 53" Niles-B.-P., rapid traverse, m. d.
 48" Gisholt rapid traverse, m. d.
 36" Bullard V. T. L. New Era type.
 54" Bullard, rapid production type.

BORING MILLS, HORIZONTAL.

5" bar, Niles-Bement-Pond, belt dr.,
 column travel, 10' floorplate 16"x11',
 rapid traverse, outboard support,
 bars.
 5" bar, Deitrich & Harvey, floor type.

5" bar, Newark 60" swing, knee type.
 6" bar, Barrett cylinder borer.
 4½" bar Niles-B.-P., floor type.
 3" bar, universal table type.
 6" bar, Niles knee type.

GRINDERS.

18"x96" Norton pl., arr. for motor dr.
 10"x36" Norton plain, overhead belt.

No. 1 Landis universal, belt drive.
 64" Diamond surface.

HAMMERS.

600 lb. Erie steam hammer.
 400 lb. Chambersburg, steam.
 2500 lb. Chambersburg stm. forging.

No. 4 Nazel, type I motor drive.
 No. 4-B Nazel hammer, motor drive.

LATHES.

72"x40" Sellers heavy type, weight
 50 tons, belt or motor drive.
 54"x28" H. S. & M. heavy, modern,
 quick change, taper attachment.
 42"x28" Putnam, geared head, taper
 attachment, quick change.

36"x16" N. B. P., triple geared, belt
 drive, new, ½ price.
 48"x21" Niles B.-P., 16-speed, geared
 head, a. c. motor drive, rapid trav.
 18"x36" LeBlond, sliding gap, 10"
 centers.

MILLING MACHINES.

No. 3-B Brown & S. hvy., plain.
 No. 4 Cincinnati plain, high power.

No. 2-B Brown & Sharpe, heavy.
 No. 14A Garvin, dividing hds., comp.

PLANERS.

72"x72"x18" Pond, rev. motor drive.
 64"x84"x30" Sellers, motor drive.
 72"x72"x30" Sellers, belt drive.
 60"x48"x14" Cincinnati, gr. box, m. d.
 48"x48"x16" N. B. P. rev. motor dr.
 52"x36"x22" N. B. P. rev. motor dr.

42"x42"x30" new Niles-Bement-Pond
 reverse motor drive.
 42"x42"x26" N. B. P. rev. motor dr.
 36"x36"x30" N. B. P. rev. motor dr.
 36"-48"x16" Niles-Bement-Pond.

PUNCHES AND SHEARS.

No. 3 Hilles & Jones dbl. 36" t., b. d.
 No. 5 Hilles & Jones, 48" t., m. d.
 No. 4 H. & J., dbl., 43" thr., m. d.

Angle shear, H. & J., 6"x1" cap.
 No. 2 Long & Allstatter double end,
 12" throat, 1" punch, 1½" shear.

MISCELLANEOUS.

Bulldozer, W. & W. No. 4.
 Cold saw, 60" Newton, m. d.
 Cold saw, 50" Espen Lucas, m. d.
 Core wire straightener, ½" to 5/16".
 Cranes, jib 12' booms with 6' air hoists.
 Flanging machine, ½" cap. McCabe,
 pneumatic.
 Hack saw, No. 5 Marvel high speed.
 Hydraulic forging press, 1200 tons.

Planer, rotary, 30" Cleveland.
 Planer, plate, 25' H. & J. No. 6.
 Press, wheel, 150-ton Cardwell.
 Riveter, Allen, 48" throat, 24" gap.
 Welding torches and generators.
 Woodworking machinery, dbl. spdl.
 shaper; self feed rip saw; automatic
 tenoner; 4-side moulder; mortiser;
 carving machine.

USED AND REBUILT MACHINERY

FOR SALE BY

The Reeve-Fritts Co., 558-560 W. Washington Blvd., Chicago, Ill.

Drill, 4-spd. Barr, $\frac{1}{2}$ " cap.
Engraving mach., No. 1-A Gorton.
Lathe, No. 2 Stark precision.
Lathe, 10"x4" Star, c. r., chuck.
Lathe, 14"x6" Hamilton, new style.
Lathe, 15"x6" Sidney, q. c. g.
Lathe, 19"x8" Economy, p. c. g.
Lathe, 9"x12" Sundstrand prod.
Miller, No. 3 Cincinnati, plain.

Pipe machine, 6" Merrill.
Pipe machine, 12" Curtis & Curtis.
Planer, 9"x7"x24" Federal bench.
Press, No. 3 Rockford, o. b. i.
Press, No. 3 American Can, o. b. i.
Press, No. 3 Consolidated, o. b. i.
Screw mach., No. 3 Foster, frict. hd.
Shaper, 16" Economic, crank.
Shaper, 20" Cincinnati, b. g.

FOR SALE BY

Mid-West Machine Tool & Supply Co.,

Davenport, Iowa

Automatic, $\frac{3}{4}$ "-1 $\frac{1}{2}$ " Cleveland.
Automatics, full, No. 2, No. 0 and
No. 00 Brown & Sharpe.
Drill, 1-S Garvin duplex.
Drill, 4-spindle Rockford, p. f.
Drills, 4-spd., 12" and 14" L. & G.
Drills, 6-spindle Allen, h. s.
Gear cutter, 4" Waltham, (new).
Gear tooth rounder, 12" Ingle.
Grinder, No. 10 B. & S. plain.
Grinder, 10x36 Norton.

Grinders, surface, Nos. 20 and 22,
Heald rotary.
Hobber, No. 4 Adams.
Hobbers, Nos. 3 & 12 B. & C.
Miller, No. 2B B. & S. pl., s. p. d.
Miller, No. 13-B B. & S., production.
Planer, 60" Pond.
Radial, 4" American sensitive.
Radial, 4" Mueller.
Screw machines, No. 2 B. & S. p. f.
Turret lathe, 1 $\frac{1}{2}$ " Acme.

Partial list; send us your inquiries.

FOR SALE BY

McDonald Machinery Co.,

1531-33 N. Broadway, St. Louis, Mo.

Bolt threader, Acme 2 and 3 heads.
Chain hoists, Yale & Towne 1 $\frac{1}{2}$ & 2-ton
Clock, electric time system.
Demagnetizer, Walker.
Drill, Baush 18-spindle.
Drills, Baker.
Drills, Leland-G. 1, 2 & 3-spd., h. s., b. b.
Drills, H. & W., Kokomo 1-spd.,
Sipp 1 & 2-spd., h. s., b. b.
Drills, 20", 24", 26" & 28" b. g., & tap.
Filing machine, Rearwin, floor type.
Furnace, Holcroft 92 k.w. annealing.
Gear cutters, No. 3 B. & S. 26".
Gear hobbers, Barber-Colman No. 12.
Grinder, Heald No. 60 cylinder.
Grinders, American No. 2 surface;
Blount, 20" wet, (3); Landis No. 1
universal; Modern internal.
Hack saws, 4x4, 6x6 & 6 Racine Jrs;
Atkins 4x4, 8x8" high speed.
Keyseaters, Davis No. 1 with cutters.
Lathes, South Bend 24"x14"; South
Bend 21"x12" q. c. g.; Porter-Cable;
Davis 22"x10"; Star 12"x5", tool
room; L. & S. 16"x6"; L. & S.
18"x8", and Hamilton 25"x14" q. c. g.
Cataract precision, collets, cross
slides, etc. 40 other assorted sizes.
Milling machines, Kempsmith No. 2;
Ohio No. 20 plain; Becker "SD"

vertical, rotary table, 17200 lbs.;
American No. 1 $\frac{1}{2}$ universal; B. & S.
No. 3 vert., s. p. d., with rotary tbl.;
Ohio 34; LeBlond No. 3-H plain;
Brown & S. No. 3 pl.; Cincinnati;
No. 2 pl. and Becker No. 4-B vert;
B. & S. No. 3 B plain, s. p. d.
Pipe machine, Curtis 3", m. d.
Planers, Gray 28"x28"x6", 1 head;
Whitcomb - Blaisdell 24"x24"x6".
Punches, Wetterhahn 18", throat $\frac{1}{2}$ "
in $\frac{1}{4}$ "; Williams & White No. 15,
double end punch and shears.
Punch presses, Bliss No. 18C; Toledo
No. 1; Swaine Nos. 29 and 37
o. b. i.; Rockford No. 3, o. b. i.
Pyrometer, Thwing elec., with rec.
Rivet spinner, Grant 3/16".
Screw machine, Gridley 1-spd. 2 $\frac{1}{2}$ "
auto.; Cleveland 1 $\frac{1}{2}$ " auto.; P. & W.
No. 2 $\frac{1}{2}$ hand; Foster No. 3 hand;
Woods No. 2 tilted turret head;
Foster No. 0; Bardons & O. No. 7;
National-A. No. 52 auto., 4-sp., m. d.
Shapers, Whipp 14" 16" and 20";
14" Steptoe; S. & M. 13"; S. & M.
16"; Cincinnati 20", b. g.
Shears, 60" thr. rotary slitting, (2).
Tapping machine, Garvin No. 2.
Welders, butt, Federal, $\frac{3}{8}$ " rds.

USED AND REBUILT MACHINERY

FOR SALE BY

United Mchry. & Supply Co., 4640 Newberry Ave., St. Louis, Mo.

Engine & generator set, 212 k. v. a., 440 v., run 3 years.....	\$6,000.
Grinder, tool & cutter, Wells, many parts, and accessories, like new....	150.
Lathe, New Haven, triple geared, 50"x12", good shape.....	985.
Miller, American plain, No. 14, quick change feeds, fine.....	425.
Press, 3-ton drop, with 15 h. p. motor, like new.....	685.
Punch, No. 7 Ryerson-Kling, 60" throat, 14" thru 1", Lysholmn table.....	2750.
Punch & shear, dbl. end, good condition.....	225.

FOR SALE BY

Marr-Galbreath Machinery Co.,

58 Water St., Pittsburgh, Pa.

Air compressors, Curtis 7"x7" for mtr.
 Auto grinder and borer, portable.
 Bender, No. 2 Buffalo, hand.
 Bolt cutter, 14" Morgan, double hd.
 Bolt cutter, 18" Acme, triple head.
 Boring mill, 56" Bickford, 2-heads.
 Boring mill, 24" Bullard, side hd. m.d.
 Boring mill, 42" Bullard, 2-heads.
 Boring mill, 16" to 36" Niles extension.
 Boring machine, Rockford No. 2 horizontal, 34" bar.
 Bulldozer, No. 28 W. W., for m. d.
 Bulldozers, Nos. 4 and 6 Ajax, m. d.
 Channeling mach. No. 3C, K&R.
 Derrick, steel, stiff lg. 15-ton, 60' boom.
 Drill grinder, "WPEL," 3/60/220.
 Drill, 22" Barnes, sliding head, b.g.
 Forging mach., 3" Acme, steel, m. d.
 Forging and rivet header, 1" Ajax.
 Gear cutter, No. 6 Brown & Sharpe.
 Gear hobber, No. 4 Farwell with grs.
 Grinder, No. 18-D Rowbottom.
 Grinder, No. 60 Heald, 19" arm.
 Hack saw, Atkins, cap. 8"x8".
 Hammer 2500 lb. Chbg., s. f. steam.
 Hammers, 40 lb. and 80 lb. Bradley.
 Keyseater, No. 3 Mitts & Merrill.
 Keyseater, No. 2 Davis, cap. 4" keyway.
 Keyseater, No. 6 Mitts & Merrill.
 Keyway cutter, 24" Morton, cap. 24".
 Lathe, 14"x6" Hendey, q. c. g. 10" ck.
 Lathe, 24"x14" Porter, plain change.
 Lathe, 26"x10" Walcott, q. c. g., d. b. g.
 Lathe, 24"x10" Putnam, taper attach.
 Lathe, 24"x12" Sch. & Boye, 3" blks.
 Lathe, 14"x8" Monarch, q. ch., t. a.
 Milling mach., No. 3-B. Milwaukee, single arm.
 Milling mach., Oesterlein, univ. No. 2
 Milling mach., No. 0., Kemp Smith universal.
 Milling machine, vertical, No. C.
 Becker, s. p. d.
 Milling mach., duplex Knight, table 84"x32".

Motor, 10 h.p. West. 3/60/220/860 rev.
 Motor, 3, 34 & 84 h.p. 220 v. d. var. sp.
 Oil separators, 4 & 14 bu. cap.
 Pinion cutter, No. 3 S. & C. 1"x1".
 Pipe machine, 10" E. C. & B.
 Pipe machine, 6" Oster, with dies.
 Planer, 48"x48"x16" Pond, 4-hds., m.d.
 Planer, 24"x24"x6" Gray, 1-head.
 Press, No. 59 Toledo, grd. 5" str. m.d.
 Press No. 175 Consolidated overhang, b. g., new.
 Press, No. 54 Consol., o. b. i., b. g., new
 Punch & shear, No. 51 Beloit comb.
 Punch, coping, steel plate, 13" thrt.
 36" die space, 2 holes 1"x1", for m.d.
 Radial drill, 24" Fosdick, t. a.
 Radial drill, 3" Drees-Mueller.
 Radial drill, 3" Prentice, g. b., t. a.
 Radial drill, 4" Drees Simplex.
 Riveter, Allen jaw, 36" cap. 14".
 Riveter, 1" Shuster rotary, belt.
 Riveter, 80 A. Grant, 4" cap. belt.
 Roll, angle, No. 24 K. & R., cap. 6x6x1, m. d.
 Roll, bending, 6"x1" Bertsch, d. e.
 Saw, cold, No. 114 Higley, cap. 3" rd.
 Saw, cold, Wagner, cap. 16" blade.
 Saw, band, metal, 30" Wright, cone.
 Saw, Burke, 12" blade, capacity.
 Seamer, No. 305 Toledo, dbl. 12x14"
 Screw mach., 8" & 10" P. & W. pl., w. f.
 Shaper, 16" Am., b. g., crank.
 Shaper, 20" Rockford, b. g., crank.
 Shapers, 20" Cin.; 24" N. B. P., b. g. cr.
 Shaper, 15" Potter & Johnson, univ. crank, belt or motor drive.
 Shear, alligator, No. 5 Canton, high knife 3".
 Turret lathe, 13" Gisholt, 24" h. s.
 Turret lathe, 44" x 30", B. & O., geared head, m. d.
 Turret lathe, 28" Gisholt, 34" h. s., t. a.
 Turret lathe, 2"x24", J. & L., geared head, s. p. d.
 Turret lathe, 18" W. & S. friction hd. cut-off

WOODWORKING MACHINES.

Borer, Smith post, No. 451.
 Cut-off saw, sw., F. & E. No. 75, m.d.
 Jointer, Woods, 8".

Lathe, 18"x12", F. & E., iron bed.
 Lathe, F. & E. No. 35 auto bk. kf. ga.
 Saw filer, band, Wardwell, "K".

USED AND REBUILT MACHINERY

FOR SALE BY

Taylor-Hall Welding Corporation, 3 May St., Worcester, Mass.

BUTT AND SPOT WELDERS.

Guaranteed to be in perfect condition.

- | | |
|---------------------------------|------------------------------------|
| One Toledo No. 137 spot welder. | One Thomson 2-A butt welder. |
| One Thomson 40-A butt welder. | One Thomson 2-A auto. butt welder. |
| One Thomson 9-A butt welder. | One Thomson 80-A butt welder. |
| One Toledo No. 3 butt welder. | One Thomson 5-A butt welder. |

Many Others.

FOR SALE BY

Taylor Manufacturing Co., Inc., 35 Albany St., Cambridge, Mass.

Automatic, 24" Cleveland, 5-hole turret.....	\$ 125.
Grinder, small tool.....	45.
Grinder, No. 75 Heald.....	100.
Grinder, 6x18 Landis No. 11466.....	750.
Grinder, cylinder, No. 60 Heald No. 344.....	350.
Grinder, cylinder, No. 60 Heald No. 349.....	350.
Grinders, Sanford centerless, (2), each.....	1500.
Saw table, 27 1/2"x33" table, 11" saw, countershaft built in, tight and loose pulleys, dust guard, mitre cutting attachment.	
Turret lathe, cross feed, 1 1/2" spindle hole, 6-hole turret, 16" swing, 8" travel to turret, back gears.....	\$50.

FOR SALE BY

Cincinnati Machinery & Supply Co., 215 E. Pearl St., Cincinnati, O.

LATHES.

- | | |
|---|------------------------------------|
| 36"x36" Bridgeford, g. h., q. c. g. | 17"x 8' LeBlond heavy duty, q. c. |
| 27"x18" Lodge & Shipley, 3 s. c., q. c. | 16"x 8' Hendey, yoke head. |
| 36"x16" Fay & Scott, l. c. g. | 14"x 6' Hendey, yoke hd., q. c. |
| 24"x12" Bradford, l. c. g., taper. | 24"x84" low swing double carriage. |
| 24"x10" American, grd. hd., latest. | 4"x84" low swing double carriage. |

MILLING MACHINES.

- | | |
|--------------------------------------|------------------------------------|
| No. 2 Cincinnati vertical, s. p. | No. 3 Kempsmith univ., complete. |
| No. 2-B hvy. Brown & Sharpe, s. p. | No. 2 Garvin duplex. |
| No. 3 LeBlond universal. | No. 24 Ohio plain miller. |
| No. 3 LeBlond, cone d., latest type. | No. 1 B. & S. 2 hds., planer type. |

GEAR CUTTERS AND GRINDERS.

- | | |
|-------------------------------------|---|
| 16" Gould & Eberhardt hobber, s. p. | No. 2 Ohio universal tool and cutter grinder, complete. |
| 18-H Gould & Eberhardt hob., s. p. | No. 3 Ohio universal tool and cutter grinder, complete. |
| No. 1 Adams Farwell hobber. | 12"x72" Brown & Sharpe plain. |
| No. 13 Brown & Sharpe. | No. 21 Besly disc, 36" complete. |
| Gleason generators, 6", 11", 18". | No. 60 Heald grinder with angle. |
| 10"x36" Landis, self-cont., latest. | |
| 12"x33" Landis universal. | |

RADIALS AND UPRIGHT DRILLS.

- | | |
|---|------------------------------------|
| 5' American, cone drive. | 28" Cincinnati cone drive. |
| 5' Hamilton, cone drive. | 26" Rockford, latest, b. g., p. f. |
| 24 1/2" Cincinnati Bickford, gear b. d. | 20" Barnes, 4-spindle gang. |
| 24" Gang, tapping att., g. b. d. | No. 2 Minster Junior, hvy. duty. |

PLANERS AND SHAPERS.

- | | |
|------------------------------------|--------------------------------------|
| 20" Queen City crank, b. g. | 28" G. & F. crank, b. g., high duty. |
| 24" Cincinnati, crank, cone drive. | 36"x36"x10' Cincinnati, 2 heads. |
| 24" Hendey, friction geared. | 96"x72"x24" Detrick & H., o. s. |
| 26"x26"x1' Gray, one head. | 60"x60"x20' Cincinnati, 3 hds. |

MISCELLANEOUS.

- | | |
|---|---------------------------------|
| Bolt cutter, 1" Landis, dbl. hd. | Keyseater, No. 1 Davis. |
| Bolt cutter, 1 1/2" Landis, dbl. spindle. | Punch & sh., 1" No. 4 New Doty. |
| Bolt cutter, 1" Acme, class A. | Press, 30-ton Lucas forcing. |
| Boring mill, 42" Bullard, 2 heads. | Press, 15-ton Lucas forcing. |

Write for prices and latest catalog.

USED AND REBUILT MACHINERY

FOR SALE BY

E. L. Klauber Machinery Co.,

Brake, 5' Chicago.
Brake, 16' Robinson, 14 gauge.
Brake, 16' Chicago steel.
Drill, radial, 42" Bickford.
Drill, multiple, 16-spindle Gardam.
Drill, 2-spindle, Taylor & Fenn.
Drill, 15" Mechanics.
Furnaces, American hardening.
Gear cutter, 32" Whiton.
Gear miller, automatic, 4" cap.
Grinder, Bryant No. 18 internal.
Grinder, B. & S. No. 11 plain.
Grinder, B. & S. No. 3 cut. & reamer.
Inside cutting machine, Excelsior No. 11.
Keyseater, Davis No. 2.
Lathe, 12"x4' Seneca Falls.
Lathe, 16"x8' Lodge & Shipley, q. c. g., d. b. g.

320 South Third St., St. Louis, Mo.

Lathe, 16"x6' Prentice.
Lathe, 16"x8' Monarch q.c.g., d.b.g.
Lathe, 24"x10' Lodge & S., q. c. g.
Lathe, 24"x14' Lodge & Davis.
Lathe, 26"x10' C. M. C., q.c.g.-d.b.g.
Miller, No. 2 Cincinnati, div. hds.
Miller, No. 2 Kempsmith.
Millers, hand, No. 0 & No. 3 Burke, No. 23 Fox.
Planer, 30"x30"x9' American.
Press, V. & O. No. 1, o. b. i.
Press, Niagara No. 12 horning.
Press, forming, die space 18x42.
Presses, Niagara, foot.
Rivet spinners, Grant (4).
Roll, Niagara 36"x24", belt drive.
Shear, serpentine, Lenox 4".
Slitting shear, Niagara No. 06.

FOR SALE BY

The O'Brien Machinery Co.,

Blueprint machine, "B" Buckeye, single phase.
Boilers, h. r. t. and vertical.
Boring mill, No. 14 Beaman Smith horizontal, floor type, 34" bar.
Compressors, 12"x10", ER 1, 325 cu. ft., (3).
Die sinker, No. 2 Pratt & Whitney.
Die sinker, No. 3 Pratt & Whitney.
Die sinker, No. 4 Pratt & Whitney.
Drill 26" Cincinnati upright, tap. att.
Drill, No. 14 Natco 12-spindles.
Drill, 20" Foote-Burt.
Drill, 32" Aurora, motor driven, tapping attachment.
Drill, 22" Aurora sliding hd., belt dr.
Drill, radial, 6' Dreeses full universal, s. p. drive.
Gear cutter, 12" Gould & E.
Gear shaper, No. 35 Fellows, belt or motor.
Gear shaper, 24" Fellows belt or mtr.
Grinder, No. 2 Cincinnati 12x36.
Grinder, Ingersoll cutter.
Hammer, 25 lb. Little Giant.
Hammer, 2500 lb., N.B.P., dble. leg.
Hammer, 2500 lbs. Chambersburg steam drop.
Hammer, 2000 lbs. Chambersburg, double frame, steam forging.
Hammer, 1000 lbs. Chambersburg steam drop forging.
Hammer, 600 lbs. Cham'burg st. d.
Hammer, 1000 lbs. Niles-Bement-Pond, double frame.
Lathe, 30"x28' Lodge & Shipley, belt, q. c. g.
Lathe, 27"x10' LeBlond, tur. attach.
Lathe, 30"x30' Harrington.

113 N. Third St., Philadelphia, Pa.

Lathe, 16"x8' Cisco, h. s., q. c. g., taper.
Lathe, 36"x20' Sidney, q. c. g.
Milling mche., No. 3 Garvin duplex.
Milling mche., No. 5-B Becker vert.
Milling machine, Bickford, arranged for fluting taps.
Milling mche., No. 3 Hendey, q. c. f.
Pipe machines, 2", 4", 6", 8" & 12".
Oster, Cox, Williams, Eaton-Cole & Burnham and Jarecki makes, belt or motor driven, comp. stock.
Planer, 36"x36"x24', Bement, 4 hds.
Planer, 60"x60"x24' Sellers, 4 hds.
Planer 36"x36"x10' Ohio, rev. mtr. dr.
Press, No. 734 Bliss trimming press, with side shear.
Press, No. 20 Bliss geared.
Press, Chambersburg trimming, mtr. drive, weight 12000 lbs.
Presses, Nos. 2, 3, 4 Federal, new.
Press, Bliss No. 2, Stiles pat.
Press, No. 049 Toledo.
Punch and shear, 12" throat Cleveland, type EF.
Punch & shear, No. 3 Royersford, double end, 18" throat.
Punch and shear, 12" Cleveland plain jaw, capacity 4x1, with shear blades.
Saw, 32" Newton, 9" capacity.
Saw, 30" Espen Lucas, 8" capacity.
Shaper, 24" Steptoe, belt drive.
Shaper, 17" Bement Miles, traveling head 2 heads.
Shaper, 20" Bement Niles, heavy duty, traveling head, one head.
Shapers, 16", 20" and 24" Gould & Eberhardt.
Shapers, 20" Stockbridge, with speed box, (3).

USED AND REBUILT MACHINERY

FOR SALE BY

Brown Machinery Co.,

2323 N. 9th St., St. Louis, Mo.

Beaders, No. 8 Pettingell, 42" thrt.
 Blowers, Nos. 7 & 9 Sturtevant.
 Buffer, Hisey, 3 h.p., 3-p., 60 c., 220 v.
 Compressor, steam drive, Norwalk
 20x20x13x24, 950 cubic feet.
 Cut-off mchs., Nutter & Barnes.
 Drill, bench, No. 1 Langelier.
 Drill, 20" Canedy-Otto, b. g., p. f.
 Drill, 22" Barnes, slid. hd., b. g., p. f.
 Drill, 24" Aurora b. g., p. f., t. a.
 Drill, 25" Superior, sliding head.
 Drill, No. 2 Barnes horiz. radial.
 Drill, horiz. radial, No. 3 Barnes.
 Furnaces, Nos. 1 and 2 American.
 Gear cutter, No. 3 B. & S., 36x8".
 Grinders, emery, St. Louis & West-
 ern, 109 new at 50% discount.
 Grinders, drill, W. & M. American.
 Grinders, tool, Diamond.
 Grinders, tool post, U. S. & Hisey.
 Grinders, plain, No. 12 B. & S.;
 10x36" Norton; 5x18" Ott.
 Grinder, cylinder, No. 60 Heald.
 Grinders, disk, No. 6 Besly; No. 14
 Gardner.
 Grinder, universal, No. 12 B. & S.
 Grinder, 30" Diamond, roll or spdl.
 Hammer, size A United, 50 lbs., m. d.
 Full Line of P. S. & W. Sheet Metalworking Machinery.

Hammer, helve, 40 lb. Bradley.
 Keyseater, No. 3 Davis.
 Lathe, 28"x10' Whitcomb-B., q. c. g.
 Lathe, 20"x 8' Lodge & S., q. c. g.
 Lathe, 17"x 6' Cincinnati.
 Lathes, 16"x8' Monarch, q. c. g.
 Lathes, 16"x6' Monarch, q. c. g.
 Lathes, No. 5A Potter & Johnston,
 with chucks.
 Lathe, turret, 16" Gisholt.
 Lathe, turret, No. 4 Wood, b. g., p. f.
 to turret.
 Motors, 1, 3, 5, 7½, 10, 15, 25 h. p.,
 3-ph., 60 cy., 220 v.
 Miller, No. 00 Brown & Sharpe.
 Miller, No. 6 Whitney hand.
 Miller, No. 4 Garvin plain.
 Planers, 60"x60"x20' Niles, 3 heads.
 Polishers, drop head, New Britain.
 Press, No. 5 Stiles & Parker, grd.
 Press, Bliss pattern, o. b. i.
 Riveter, 4" Adt.
 Screw machine, 1" Pratt & Whitney.
 Shapers, 24" L. & D.; 24" S. & S.
 Shear, rotary, No. 13 Gisholt.
 Shear, rotary splitting, No. 134
 Marshalltown, 4' throat, 1" cap.
 Tapping machines, Garvin; Burke C.

FOR SALE BY

Severin-Tripp Machinery Co.,

25 Church St., New York, N. Y.

Boring mill, 84" Niles vertical.
 Boring mills, 36" Bullard New Era.
 Boring mill, vertical, 8' Pond.
 Boringmill, vertical, 6' Pond.
 Boringmill, horizontal, 8" bar.
 Boring mill, hor., Niles, 4½" spdl.
 Boring mill, hor., Niles, 6" spindle.
 Boring mill, hor., Bement 4" spdl.
 Brake, 8' Ohl, 16 gauge.
 Crane, 20-ton box, aux. 50' span, d. c.
 Cranes, 10-ton, Whiting 52' 6" span,
 a. c. motor, (2).
 Crane, 10-ton Whiting, 48' 6" span,
 a. c. motor.
 Derrick with bull wheel, Guy
 Terry & Tench, 10-ton 100'.
 Drill, No. 3 Wall radial, 12".
 Gear tester, bevel, Gisholt.
 Grinder, Landis 26"x144".
 Hammer, 4 B. Nazel.
 Hammer, 400 lb. Chambersburg.
 Hammer, 2500 lb. Chambersburg
 board drop, m. d.
 Hammers, 2 board drop Chambers-
 burg, 5000 lb., m. d.
 Lathe, 18"x 6' Champion.
 Lathe, 24"x12' Prentice, geared hd.
 Lathe, 24"x16' LeBlond.
 Lathe, 24"x16' 6" Greaves-Klusman,
 oil country.

Lathe, 28x16 McCabe, b. d., com-
 plete, \$400.
 Lathe, 24x14 Rahn-Larmon, b. d.
 complete \$400.
 Lathe, 36"x22' Pond, d. c. motor.
 Lathe, 42"x28' Putnam, geared hd.
 Lathe, 60"x38' Pond.
 Lathe, 72"x38' Pond.
 Lathe, 72"x40' Sellers.
 Lathe, gap, 18"x36' Fay & Scott.
 Miller, No. 3 Brown & S. vertical.
 Planer, 36"x36"x14' Pond.
 Planer, 42"x42"x26' Pond.
 Planer, 54"x54"x14' Pond.
 Planer, 72"x72"x30' Sellers, b. d.
 Planer, 96"x96"x20' Pond.
 Press, 500-ton United E. & F.
 Press, wheel, 150-ton Caldwell.
 Punch, Cleveland "C" 24".
 Punch, Cleveland "EF" 24".
 Punch, Cleveland "G" beam.
 Punches, No. 4 Hilles & J. dbl. end.
 Radial drill, 30" gang, b. d.
 Radial, 36" Cin. Bickford, s. p. d.
 Radial, 4' American, s. p. d.
 Roll, bending 25', top roll 26".
 Rotators, 5-ton, 5-7½, 25-ton.
 Shaper, 24" Cincinnati.
 Shear, alligator, No. 3 Carlin.

USED AND REBUILT MACHINERY

FOR SALE BY

J. P. Rentschler & Co.,

6722 N. Maplewood Ave., Chicago

Hammer, 200 lb. Bliss, 4-poppet.
Press, No. 3 R. & K., o. b. i., 4" str.
Press, No. 3 Crosby, o. b. i., 1 1/2" str.
Press, No. C-92 Ferracute, notching.
Presses, Nos. C-5 & S-51 Ferracute.
Press, No. 5 1/2 Walsh, o. b. i. geared.
Press, No. 1 1/2 Bliss toggle drawing.

Press, No. 165 Consolidated, dbl. crk.
Seamer, No. 12 McDonald, double automatic.

Shaper, 16" Gould & Eberhardt.
Shear, circle, No. 203 Stoll.
Shear, squaring, No. 136 Niagara.

Lowest prices. Many other bargains. What have you for sale?

FOR SALE BY

The Central-West Machinery Co. 116-118 E. Water St., Cincinnati, O.

Drill, 20" Aurora, power feed, back geared, good condition.....\$ 95.
Drill, 20" Aurora, tapping attachment, good condition.....90.
Grinder, Landis 10"x30" universal, fair condition.....175.
Lathe, 18"x 8" Sebastian, loose change.....125.
Milling machine, No. 3 plain Kempsmith, geared feeds all directions,
double back gear, 90% new.....550.
Turret lathe, No. 4 Milholland, bar and chucking equipment, good cond. 450.
Planer, 26"x26"x14' Lodge & Davis, one head, good buy.....350.
Turret lathe, 3"x36" J. & L. geared head, geared feeds, first class cond.. 450.

FOR SALE BY

Fitzsimmons & Cole Machinery Company

1206 House Building,

Pittsburgh, Pa.

Air compressor, Ingersoll-Rand, imperial type 10.
Bolt cutters, 1 1/2", 2", 2 1/2", 4" Landis.
Boring mill, 30" Colburn, m. d.
Boring mill, 42" Bullard, b. d.
Boring mill, 84" Pond, 2 hds., b. d.
Bulldozer, No. 27 W. & W., m. d.
Bulldozer, No. 7 W. & W.
Crane, 10-ton Whiting, 52'6" span.
Drill, radial, 6' Prentice, s. p. d.
Drill, 14" Hamilton upright, b. d.
Drill, 24" Cinti. upright, sliding hd.
Flanger, McCabe, 4" capacity.
Gear cutters, spur and bevel.
Gear plauer, 24" Gleason, bevel, b. d.
Grinder, 16"x68" Landis, crankshaft.
Grinder, No. 16 Blanchard.
Hammer, 50 lb. Mayer, upright.
Hammer, 100 lb. Bradley, upright.
Hammer, 150 lb Yeakley, pneumatic.
Hammer, 200 lb. Beaudry, upright.
Hammers, 2-B, 3-B & 4-B Nazel.
Hammer, st. forg'g, 1250 lb. Morgan.
Keyseater, No. 0 Mitts & Merrill.
Lathe, 16"x6" L. & S., g. c. g., t. a.
Lathe, 32"x18" Bridgeford, grd. hd.
Lathe, axle, Bridgeford, dbl. hd., m. d.
Miller, univ., No. 3-B Brown & S.
Miller, slab, 24x20x14" Ingersoll.
Planer, 36"x36"x10" Cincinnati, 2 hds.
Planer, 48"x42"x12" Cincinnati, 2 hds.
Planer, 48"x48"x16" Pond, 4 hds., b. d.
Planer, 36"x36"x20" Pond, 4 hds., m. d.
Planer, o. s., Cleveland, 36"x36"x16".

Planer, o. s. Detrick & H., 42"x42"x12'
Planer, rotary, No. 2 Cleve., 48" hd.
Press, Ferracute P-1, 1 1/2" stroke.
Press, No. 37 1/2 Bliss, s. s., 6" stroke.
Press, toggle, No. 1 1/2 Bliss.
Press, wheel, 400-ton Niles.
Press, forging, 500-ton United hyd.
Punch, beam, Style "G" Cleveland.
Punch, hor., Cleveland, 1" thru 1".
Punch & s., 30" thr., L. & A. 1 1/2" thru 1".
Punch & s., Pels comb., 1 1/2" thru 1".
Riveter, Hanna, 18" thrt., 15" gap.
Riveter, Allen, 66" throat, 15" gap.
Riveter, stake, No. 6 Whiting, 48" thrt.
Rolls, angle bending, 6x6x1" K. & R.
Rolls, bending, Niles 10"x1", m. d.
Sand blast, MacLeod, 36"x36".
Saw, cold, 20" Higley.
Shaper, 24" Gould & Eberhardt, b. d.
Shear, angle, H. & J., cap. 6"x8"x1".
Shear, Lewis, 14" square.
Shear, bevel, Lennox, 1".
Shear, guil. No. 0 H. & J., 1 1/2" round.
Shear, guil. No. 3 H. & J., 2 1/2" square.
Shear, rot., No. 110 1/2 Bliss, 3/16" cap.
Shear, rotary, No. 3 Quickwork, 1".
Shear, rotary, No. 6 Quickwork, 1".
Shear, plate, L. & A., 48"x14".
Shear, squar. 10"x8" Cincinnati, m. d.
Shear, squar. 7"x8" Canton, b. d.
Straightener, bar, No. 3 K. & R.
Straightener, beam, No. 4 H. & J.
Testing machine, 100,000 lbs. Richie.
Upsetters, 1 1/2" to 5".

USED AND REBUILT MACHINERY

FOR SALE BY

J. Bleser Mfg. Co., Air compressor, 12x12 Laidlaw-Dun- Gordon, and 30 h. p., 575 r. p. m., 3-phase electric motor; all for \$500. Lathe, engine, 16x8 G. & K., q. c. Lathe, 14"x6" Monarch, q. c.	16th & Madison Sts., Springfield, Illinois Miller, No. 2 Hendey universal. Miller, Cinti. No. 3 univ., O. type. Millers, bench, No. 3 Burke; Rockd. Radial drill, 5" Bickford. Shapers, Smith & Mills 16", 12".
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FOR SALE BY

H. R. Irwin Mfg. Co., Surplus Tools used for Jig and Fixture work. Condition-very fine. Will suit any buyer. Offered at attractive prices. Engine lathe, brand new, 24"x10" LeBlond, 3-step cone, double back gears, quick change, clutch apron, cabinet legs, pan bed, pump, piping, beltshifter, face plates, countershaft, etc. A fine accurate tool for tool room or factory use. Factory price \$2,700.....\$1,750. Engine lathe, 17"x8" LeBlond heavy duty, 3-step cone, double back gears, quick change; fine condition.....700. Flat turret lathe, 34"x36" Cincinnati Acme, geared head, chucking equip- ment; never been used on heavy work; 95 to 98% new condition.....1,000. Gisholt 21" standard, 34" hollow spindle, 3-jaw chuck, 4-way tool post, taper attachment, gear box, tilting turret, pump, splash pans, counter- shaft. Only occasionally used. Its accuracy and new condition will suit any buyer.....1,250. Milling machine, LeBlond No. 0 size, table 8"x34"; very fine condion,.....250. Shaper, 20" Cincinnati, back geared, fine condition.....800. Turret lathe, S. & W., 14" bar capacity, power feed to turret, pan bed, pump, etc.....150.	
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These tools can be inspected under the belt. They will please you.

FOR SALE BY

F. W. Burns Machinery Co., PUNCH PRESSES. No. 1684 Toledo toggle drawing. No. 14-B Bliss toggle drawing. No. 14 Bliss toggle drawing. No. 6 Consolidated, geared. No. C-5 Ferracute, o. b. i., f. w., type. No. S-51 Ferracute, d. c., f. w. type. No. 65 Consolidated, dbl grd., s. s. No. 64-A Consolidated, s. s., f. w. type. AUTOMATICS 2", 1 1/2", 2", & 2 1/2" Cleveland, model A. 1 1/2" Cone automatics, like new, (3). No. 2-G Brown & Sharpe, 1" cap. No. 3 Acme screw slotter.	Sattley Bldg., Racine, Wis. No. 83 Consolidated, adjustable tbl. No. 30 Cameron arch press, f. w. type. No. 51 Toledo arch press, geared. No. C-92 Ferracute notching press. No. 10 Excelsior, 20" throat. No. 2 V. & O. inc., f. w. type. No. 3 Adriance, incl., f. w. type. No. 56 Beloit punch & shear. No. 4 Warner & Swasey, power feed. No. 3 Bardons & Oliver. 4" Geometric threaders, (3).
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LATHES.

12"x 5' Hendey, q. c. 13"x 8' South Bend, loose change. 20"x10' Bradford, q. c. 20"x18' Pond.	15"x 8' South Bend, loose change. 22" Prybil spinning lathes. 9"x14" Porter-Cable.
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MISCELLANEOUS.

Blowers, No. 2 American gas. Drill, No. 25 Foote-B, hvy. duty. Drill press, Kerns 6-spindle 16", h. s., b. b. Engraving mach., No. 1-A Gorton. Forging machine, No. 1 1/2 Ajax. Gear cutter, No. 13 Brown & S. Grinder, Detroit centerless. Grinders, No. 1 1/2 Landis universal.	Grinder, No. 70 Heald. Hammer, 800 lb. B. & S., board drop. Jointer, 16" Famous. Miller, No. 3 Burke, hand. Riveting hammer, No. 6-B H. S., 4". Sander, 42" Berlin three-drum. Shaper, 24" Stockbridge Shear, No. 203 Stoll circular. Washer, Blakeslees metal.
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USED AND REBUILT MACHINERY

FOR SALE BY

J. E. Haetten & Co., Inc., **50 Church St., New York, N. Y.**

Automatic, 34" Cleveland, 3-hole turret, each.....	\$ 700.
Bolt cutter, 2" Landis, single head, motor attached.....	550.
Boring mill, 96" Pond vertical, arranged for motor.....	2750.
Boring mill, 96" Bickford, cone drive, 3 heads.....	1500.
Boring mill, 36" Bullard, New Era type, serial 4330, chuck.....	1500.
Broach, No. 2 LaPointe Hudson.....	350.
Broach, No. 4 LaPointe Hudson, very good.....	450.
Clocks, International Time, 75 card rack, (2).....	75.
Drill, 4-spindle Leland-Gifford h. s., auto. feeds.....	500.
Furnace, American No. 1A carbonizing 72x30 controlled.....	400.
Furnace, American No. 64 tempering and annealing.....	550.
Grinder, 18x55 Norton autopart, all equipment.....	1500.
Grinder, 18x52 Landis self contained, 12000 serial.....	750.
Hammer, 1600 lb. Waterbury board drop.....	1000.
Hammer, 800 lb. Billings & Spencer board drop.....	800.
Hammers, 100 lb. Bradley upright compacts, (2), each.....	325.
Hammer, No. 4 Nazel air—5x5 with motor.....	1000.
Keyseater, No. 2 Mitts & Merrill, A-1 condition.....	350.
Keyseater, No. 3 Catlin with post, good order.....	350.
Lathe, Schumacher-Boye, d. b. g., q. c., taper chuck.....	750.
Lathe, Niles-Bement-Pond carwheel, motor, pneumatic toolpost.....	4000.
Lathe, 24"x26" Cincinnati-Acme turret, bar feed.....	250.
Miller, No. 2 LeBlond plain, countershaft and vise.....	400.
Miller, 11"x30" Dalton mfg., like 7H Becker.....	60.
Miller, No. 3 Cincinnati universal, cone drive, dividing head, vise.....	400.
Planer, 36"x10' Cincinnati, 1 head, motor attached.....	900.
Press, No. 23 V. & O. geared punch press.....	800.

FOR SALE BY

The Randle Machinery Co.,

1733 Powers St., Cincinnati, Ohio

Automatic, 44" Gridley.	Lathe, 24"x24' Fifield, loose change.
Bench press, style 'W', Emco make.	Lathe, 30"x18' H-S-G., q. c.
Bolt cutter, 2" Acme.	Lathe, 36"x16' N-B-P., q. c., new.
Bolt cutter, 4" Acme.	Lathe, 36"x20' Schumacher-B., q. c.
Boring mills, 40" and 42" King.	Milling mach., No. 2 B. & S., univ.
Boring mill, 48" Gisholt.	Milling mach., No. 3 Cinti. univ.
Boring mill, 53" N-B-P.	Milling machine, No. 2 LeBlond, pl.
Boring mill, 72" Cincinnati.	Planer, 36"x38"x16' Gray, 3 heads.
Boring mill, 60" Niles, spindle type.	Planer, 36"x36"x16' Gray, 2 heads.
Boring mill, 96" Cincinnati.	Planer, 30"x30"x16' American, 2 hds.
Drill, 20" Rockford upright, t. a.	Planer, 26"x26"x16' W. & B., 2 hds.
Drill, 21" Cincinnati upright.	Shaper, 14" Steptoe, plain crank.
Drill, 24" American plain radial, g. b.	Shaper, 16" Steptoe, b. g.
Drill, 3" Carlton, pl. radial, s. p., b. g.	Shaper, 15" Potter & Johnston.
Drill, 3" American pl. radial, s. p., g. b.	Shaper, 16" Gould & E., plain.
Drill, 4" Bickford plain, s. p., g. b.	Shapers, 16" & 28" Queen City, slightly used.
Drill, 4" Morris plain, s. p., g. b.	Shaper, 16" brand new American, m. d.
Drill, 6" Niles universal, m. d.	Shaper, 20" Columbia, back geared.
Grinder, 14x72" Queen City pl., b. d.	Shaper, 24" Flather, back geared.
Grinder, 8"x30" Queen City plain.	Shaper, 24" Kelly, back geared.
Lathe, 14"x6' LeBlond, l. c.	Shaper, 24" Queen City, b. g.
Lathe, 16"x 6' new Monarch, q. c.	Shaper, 28" Columbia, back geared.
Lathe, 16"x 6' LeBlond, l. c., t. a.	Squaring shear, 4"x146" Streine gap, motor driven.
Lathe, 17"x 6' loose change, rebuilt.	Turret lathes, 24"—2x36" J. & L.
Lathe, 18"x 8' LeBlond, l. c.	Turret lathes, 28"&34" Gisholt, m. d.
Lathe, 18"x10' LeBlond, q. c., 6x14 gap.	Wheel press, 200-ton Caldwell, slightly used.
Lathe, 24x10' American, q. c., grd. hd.	
Lathe, 20"x12' Ohio, loose change.	
Lathe, 24"x12' LeBlond, l. c.	
Lathe, 24"x14', loose change.	

Above partial list only. Let us have your inquiry.

USED AND REBUILT MACHINERY

FOR SALE BY

Carlson Machinery Co., Inc.,

Davenport, Iowa

Boring machine, No. 3-A universal.	Hammer, No. 3-A High Speed, motor drive.
Boring machine, No. 2 Rockford.	Lathe, 15"x6" Rockford semi q. c.
Brake, 72" Peck, Stow & Wilcox.	Lathe, 14"x6" Hendey.
Centering machine, No. 4 P. & W.	Lathe, 18"x6" Lodge & Shipley.
Drill, 21" Canedy-Otto, p. f.	Lathe, 32"x60" Lo-Swing.
Drill, 25" Snyder, sl. hd. with t. a.	Miller, No. 1 Rockford plain.
Drill, 30" G. & E., sliding head.	Miller, No. 1 1/2 Cincinnati univ.
Drill, 36" New Haven.	Miller, No. 2-B B. & S. pl., s. p. d.
Drill, 1" Sipp h. s., b. b.	Miller, No. 34 Ohio plain.
Gear hobber, No. 12 Barber-Colman.	Planer, 24x24x8 Powell.
Gear hobber, 24" Schuchardt & S.	Press, No. 29 Swaine, o. b. i.
Gear cutter, 6-A Cincinnati.	Press, No. 4 Toledo, o. b. i.
Grinder, 10x20 Landis univ.	Press, No. 5 Toledo, o. b. i.
Grinder, 6x32 Norton plain.	Shaper, 16" Ohio.
Grinder, No. 65 Heald cylinder.	Shaper, 16" Smith & Mills.
Grinder, 24" Norton snagging.	Shaper, 20" Smith & Mills.
Grinder, 14" Blount wet tool.	Shaper, 20" Cincinnati.
Grinder, No. 8 Besly disc.	Turret lathe, No. 4 W. & S. plain.
Grinder, No. 14 Besly disc.	Turret lathe, No. 6 W. & S., p. f. to carriage.
Grinder, No. 2 Oakley univ. t. & c.	
Lathe, 13"x5" Sheppard, grd. hd.	

FOR SALE BY

Brownell Machinery Co.,

150 Pine St., Providence, R. I.

DRILLS.

5' Prentice Bros. radial.	23" Weigel, sliding head.
4' Prentice Bros. radial.	23" Prentice, stationary head.
26" Henry & Wright sensitive radial.	2-spindle Leland, b. b.

GEAR CUTTERS

No. 13 B. & S. 18x4, spur and bevel.	No. 3 B. & S. 26x8, spur.
--------------------------------------	---------------------------

GRINDERS.

No. 11 B. & S. plain cylindrical.	Nos. 2 & 3 B. & S. cutter & reamer.
No. 2 B. & S. surface, magnetic ch.	20" Diamond emery.
No. 1 Norton tool and cutter.	

LATHES.

30"x20" Fitchburg.	16"x8" Reed B. & G.
27"x14" Sidney, heavy duty.	B. & S. dbl. hd. polishing & finishing.
20"x10" Mouarch.	

MILLING MACHINES.

No. 42 Ohio plain.	No. 4-B Becker vertical.
No. 2 B. & S. plain, b. g.	Whitney hand.
No. 2 B. & S. vertical.	Vertical spdl. att. for B.&S. millers.

PLANERS AND SHAPERS

36"x36"x12' Gray, spur gear.	17"x17"x4' Whitcomb.
24"x24"x6' Whitcomb.	15" Potter & Johnston shaper.
22"x22"x5' Whitcomb.	7" Rhodes shaper.
17"x20"x4' Whitcomb.	

SCREW MACHINES.

No. 0 B. & S. plain head, wire feed.	No. Bardons & Oliver, g.f.h., wire fd.
No. 2 Garvin plain head.	14"x10" P. & W., b. g.
No. 2 Foster plain head, wire feed.	

POWER PRESSES.

No. 4-A Standard s. a., roll feed.	No. 4 Manville Bros., rat. dial feed.
No. 4 E. J. Manville, s. a., p. p., s. r. fd.	No. 2-A Standard s. a.
No. 4 E. J. Manville, s. a., p. p.	No. 2-B Standard s. a.

MISCELLANEOUS.

Boring mill, No. 1 Cleveland horiz.	Magnetic chucks 8x10, 110 v., d. c.
Band saw, 12" H. & R. metal cutting.	Rolling mills 3x6, also 5x8.
Broaching machine, No. 2 Lapointe.	Shaft straightener, Rockford.
Chain hoist, 10-ton Y. & T., spur grd.	Slotter, 12" Bement-Miles.
Filing machine, Thurston.	Swaging machine, No. 2 Langelier.

USED AND REBUILT MACHINERY

FOR SALE BY

Scott-Bansbach Machinery Co., 130 S. Clinton St., Chicago, Ill.
Guaranteed Used Tools.

Auto. sc. mch., B. & S. No. 19. \$550.	Lathe, 14"x8' Flather q. c. \$250.
Auto. sc. mch., B. & S. No. 60. 500.	Lathe, 14"x8' Bradford comp. tool
Auto. sc. mch., B. & S. No. 60. 450.	room equip. inc. relieving att. 800.
Auto. sc. mch., B. & S. No. 0.. 550.	Lathe, 14"x8' Hendey taper & c. 500.
Auto. sc. mch., Cinti. 5 sp. 4" cap. 950.	Lathe, 18"x8' Carroll, d. b. g. q. c. 450.
Bolt cutter, 2" dbl. hd. D. & H. 300.	Lathe, 20"x10' Bradford pl. ch.. 350.
Boring mill, Colburn vert. 30". 450.	Miller, 42" Briggs (Gooley & E.) 500.
Boring mill, Morris horiz., mtr.	Miller, auto. P. & W. No. 12 mfg. 600.
dr. with motor, 1-15/16" spdl.. 1000.	Miller, Garvin No. 16 plain. 400.
Buffer, 3 h. p. Gardner, 220 v.,	Miller, Ingersoll slab 42x36x8.. 2250.
a. c., 3 phase, used 3 years. 200.	Oil separator, No. 400 Curtis. 300.
Buffer, 5 h. p. Hill Curtis, 220 v.,	Planer, 16"x16"x42" P. & W. 1 hd. 275.
a. c., 3 phase, used 90 days. 375.	Planer, New Haven, 24"x24"x6' 500.
Buffer, 3 h. p. U. S., 220 v., a. c.,	Press, grd., No. 8-M American
3 phase, used 90 days. 250.	Can, 3" str. 25000 lbs. tie rod.. 2000.
Drill, Avey 1-spindle, 3" diam.. 200.	Punch, 48" throat Kling, cap.
Drill press, 4 sp. Kokomo h. s.. 400.	1"x1" pl. jw. 800.
Drill press, No. 310 Baker (5) ea. 250.	Riveter, No. 3A High Speed. 225.
Drill press, 24" Minster, heavy. 350.	Saw, cold No. 1 Cochrane & Bly 175.
Drill press, 36" Aurora, sl. hd.. 250.	Saw, 9"x9" Peerless high speed 175.
Grinder, No. 2 B. & S. surface.. 450.	Screw mch. 1/4" P. & W. comp. 150.
Grinder, No. 1 Frazer surface	Screw mch. No. 1 W. & S. comp. 125.
and cyl. convertible complete. 450.	Screw mch. No. 10 Foster 3" cap. 700.
Grinder, Detroit centerless 4B. 1500.	Shaper, 24" Rockford, bk. gd. cr. 600.
Grinder, No. 65 Heald, b. b. spd. 850.	Shaper, 26" Stockbridge, b. g.
Hammer, drop, No. 1 M. & G.. 150.	crank, h. d. 600.
Lathe, 14"x6' Bradford pl. ch.. 150.	

Wood-Working Machinery

For a large list of new and used wood-working machinery and allied equipment, consult the **Wood-Working Machinery List**, a publication similar to this but devoted to the advertising of saw-mill and wood-working machines. A copy may be had free on application to the publisher.

Hitchcock Publishing Co.,
508 So. Dearborn St., Chicago, Ill.

Lowest Prices!

and The World's Greatest Stock!

LATHES

48"x40' Pond h. d., triple geared.
42"x22' American geared head, q. c.
36"x30' American geared head, q. c.
36"x20' Niles h. d. triple geared.
36"x12' Bridgeford grd. hd., q. c.
21"x12' LeBlond h. d., q. c.
20"x10' Davis, h. d., q. c.
16"x10' Hendey q. c.
16"x 8' Springfield q. c.
19"x10' LeBlond q. c. production.

MILLERS

No. 3 Brown & Sharpe vertical.
No. 5-C Becker vertical.
No. 5-D Becker vertical.
No. 1 Newton vertical.
No. 7-H Becker Lincoln type.
No. 2½ Hendey Lincoln type.
No. 2A Milwaukee plain.
No. 3 Milwaukee plain.
No. 21 Garvin plain.
No. 20 Oesterlein plain.
No. 25 Oesterlein universal.
No. 29 Oesterlein universal.
24"x24"x12' Ingersoll horiz. slab.

GRINDERS

16"x66" Landis universal.
10"x48" Landis universal.
16"x36" Landis universal.
16"x68" Landis crankshaft.
12"x36" Fitchburg cylindrical.
No. 60 Heald cylinder.
No. 2 Gisholt universal tool.
Yankee drill grinder.
No. 3 Diamond wet tool.

PRESSES

No. E-57 Ferracute 2½" stroke.
No. 58 Toledo, double geared, 4" str.
No. 75½ Bliss trimming.
No. 4 Pratt & Whitney trimming.
No. 5 Crosby Stiles type.
No. 6 American Can inclinable.
No. 4 R. & K. inclinable.
No. 2 L. & A. Style A forming press
12'—100 ton pressure.

PLANERS

60"x60"x18' Pond 2-heads.
48"x48"x18' New Haven 1-head.
48"x48"x 8' Sellers 1-head.
30"x30"x 6' Gray 1-head.
24"x24"x 8' Gleason 1-head.
22"x22"x 5' Gray, 1-head.
F2 Newton planer centers.
F1 Newton Planer centers.

SHEARS

30" M. & H. guillotine, cap. 6"x6".
48" Lewis gate, cap. 1¼".
6' Lennox rotary, cap. ¾".
30" Bethlehem rotary, cap. ¼".
24" thrt. Morgan dbl. end, cap. 1".
No. 7 United alligator, cap. 6"x6".
No. 2 Carlin alligator, cap. 5"x5".

HAMMERS

6000 lb. Chambersburg d. f. steam.
4000 lb. Niles d. f. steam.
2500 lb. Chambersburg d. f. steam.
2000 lb. Chambersburg d. f. steam.
4000 lb. Niles s. f. steam.
1500 lb. Niles s. f. steam.
800 lb. Niles s. f. steam.
3000 lb. Bliss board drop.
2500 lb. Bliss board drop.
2000 lb. Bliss board drop.
1000 lb. Union board drop.
800 lb. Union board drop.
400 lb. P. & W. board drop.
80 lb. Bradley helve cushion.

MISCELLANEOUS

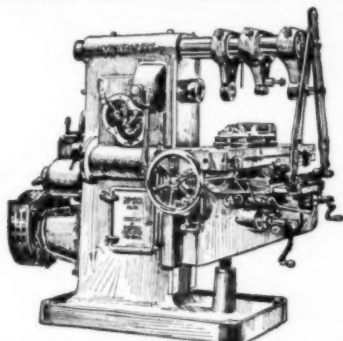
No. 7 Ajax bulldozer.
No. 6 Ajax bulldozer.
No. 4-B W. & W. bulldozer.
2" National d. h. bolt cutter.
6" Bignall & Keeler pipe mche.
1" National washer machine.
2" National washer machine.
66" Allen air riveter.
No. 4 Langeleir swaging.
10 ton Morgan electric crane, 73".
10 ton Shaw electric crane 65".
5 ton Whiting electric crane, 35".

*Machinery Bulletin No. 210, describing our
complete stock, mailed free on request.*

HARRIS BROTHERS COMPANY
35th & Iron Sts., CHICAGO

Milwaukee Millers—

Like New—But Cost Less



Factory Rebuilt Milwaukee Milling Machines

Only a few left. They will satisfy both your Production and Purchasing Departments. Every machine is completely disassembled, re-scraped, and new parts used wherever needed. They carry the same accuracy guarantee as our new machines. First come, first served. Better write today.

THESE ARE STILL AVAILABLE

No. 1 B Plain	No. 2B Universal
No. 2AS Mfg. M. I. B.	No. 3B Plain
(Motor-in-Base)	No. 2B Vertical
No. 2BS Plain	No. 3B Vertical
No. 2A Manufacturing	

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Address: Rebuilding Department

MILWAUKEE MILLING MACHINES
KEARNEY & TRECKER
 CORPORATION

5926 National Ave.,

Milwaukee, Wisconsin

Machine Tools of Quality

Engine Lathes and Turret Lathes

- | | |
|--------------------------------------|--|
| 13"x 6' Willard, geared head. | 21"x 12' Cisco, q. c. |
| 14"x 6' Hendey, q. c., tie bar head. | 24"x 8' Walcott, q. c. |
| 14"x 6' Lodge & Shipley, q. c. | 24"x 10' Boye & Emmes, q. c. |
| 16"x 6' Cincinnati, q. c. | 25"x 10' LeBlond, q. c. |
| 16"x 6' Lodge & Shipley, q. c. | 30"x 17' Houston, Stanwood & Gamble, q. c. |
| 16"x 8' Sidney, q. c. | 32"x 14' Draper, s. c. |
| 16"x 8' LeBlond, q. c. | 32"x 34' American Tool Wks., q. c. |
| 21"x 10' LeBlond, q. c. | |
- No. 2 Foster plain head Screw Machine.
No. 2 SP Garvin Hand Screw Machine.
No. 2 Warner & Swasey Turret Lathe.
No. 4 Bardons & Oliver Turret Lathe.
2x24" Jones & Lamson, 2-spindle Flat Turret Lathe.
No. 4 Brown & Sharpe wire feed Screw Machine.
No. 4 Foster Turret Screw Machine.
No. 4 Milholland Turret Lathe.
2" Pratt & Whitney Turret Lathe.
2 1/4" Acme Turret Lathe.
3x36" Jones & Lamson Flat Turret Lathe.
24" Gisholt Turret Lathe.

Shapers and Planers

- 24" Kelly heavy duty b. g. Crank Shaper.
20" Cincinnati heavy duty b. g. Crank Shaper.
20" Steptoe heavy duty b. g. Crank Shaper.
16" Baush & Harris Crank Shaper.
24"x24"x6' G. A. Gray Co. Planer, one head on rail.
38"x38"x18' Niles Tool Works Planer, two heads on rail.

Gear Machinery and Grinders

- No. 12 Barber-Colman Gear Hobbers.
No. 18H Gould & Eberhardt high duty Hobbers.
No. 5A Lees-Bradner Gear Hobbers.
No. 3-26" Brown & Sharpe Automatic Spur Gear Cutters, late type.
No. 3-36" Brown & Sharpe Automatic Spur Gear Cutter, late type.
No. 3-24" Cincinnati Automatic Spur Gear Cutter.
20" Rochester Gear Tooth Rounder.
No. 60 Heald Cylinder Grinder.
6x15" Fitchburg Plain Cylindrical Grinder.
6x32" Norton Plain Cylindrical Grinder.
8x30" Modern Plain Cylindrical Grinder.
12x36" Cincinnati Plain Cylindrical Grinder.
No. 2 Gardner Disc Grinder.
No. 6 Gardner Disc Grinder.

EASTERN MACHINERY CO

We also Buy machinery.

Offered By Eastern—

No. 120 Gardner Ball Bearing Disc Grinder.
No. 12—26" Besly Disc Grinder.
No. 18—30" Gardner Pattern Maker's Disc Grinder.
No. 6 Rivett Internal Grinder.
Capital Internal Grinder.
No. 70 Heald Internal Grinder.
Walker single stroke Surface Grinder.
Sellers Twist Drill Grinder.
Wilmarth & Morman Combination Twist Drill and Emery Grinder.
No. 1 R. K. LeBlond Universal Tool and Cutter Grinder.
No. 1½ Cincinnati Universal Tool and Cutter Grinder.
No. 2 Oakley Universal Tool and Cutter Grinder.
No. 1 and No. 3 Brown & Sharpe Universal Grinders.
No. 1 Diamond Universal Grinder.

Radials and Upright Drills

5' Reed-Prentice Radial Drill.
4' American triple geared Plain Radial Drill.
3' Baush Plain Radial Drill.
3' American Sensitive Radial Drill.
2½' Carlton ball bearing Sensitive Radial.
No. 1 and No. 3 Barnes Horizontal Radial Drills.
No. 310 Baker Bros. heavy duty Drill.
No. 614 Baker Bros. heavy duty Drill.
No. 519 Baker Bros. Horizontal Drill.
36" Cincinnati Bickford Upright Drill.
1, 2, 3, 4-spindle Henry & Wright ball bearing Drills.
22" Barnes Upright Drill.
22" Aurora Upright Drill.
28" Cincinnati Bickford Upright Drill, speed box drive.
20" Barnes All Geared Drill, self oiling.
5-spindle Detroit Horizontal Drill.
3-spindle Barnes size 26" Gang Drill.

Milling Machines

No. 4 Cincinnati Universal, cone pulley, complete.
No. 3 Cincinnati Universal, cone pulley, complete.
No. 2 Brown & Sharpe Universal, cone pulley, complete.
No. 1½ Brown & Sharpe Universal, cone pulley, complete.
No. 1½ Rockford Universal, cone pulley, complete.
No. 1½ A Owen Universal, cone pulley, complete.
No. 5 R. K. LeBlond Plain, single pulley, drive.
No. 4 Cincinnati High Power Plain, cone pulley drive.
No. 3B Brown & Sharpe Plain, single pulley.
No. 3 Kempermith and No. 3 Cincinnati Plain, cone pulley drive.

(Continued on Next Two Pages)

08 E. Pearl St., CINCINNATI, O.
What have you to Sell?

(Continued from Preceding Pages)

Milling Machines—Continued.

No. 2 Cincinnati Plain, cone pulley.
No. 2 R. K. LeBlond Plain, cone pulley.
No. 2Y Brown & Sharpe Plain, cone pulley.
No. 1½ Cincinnati Plain, cone pulley.
No. 3 Brown & Sharpe Vertical, single pulley, with power rapid traverse.
No. 3 Becker vertical. | Carter & Hakes mfg. miller.
No. 6 Becker vertical. | Gooley & Edlund Briggs type.
No. 6 Whitney hand miller. | Hendey-Lincoln type.
No. 2 Garvin Lincoln type. | No. 2 Bristol hand miller.
No. 7 Becker Lincoln type. | No. 2 Fox hand miller.

Miscellaneous

Air Compressor, 10x10" Chicago Pneumatic Tool Co., Class NSB.
Air Compressor, 18"x12"x12" Laidlaw double stage, steam driven.
Arbor Presses, Nos. 4 and 5 Greenerd.
Arbor Press, No. 4 Atlas.
Arbor Press, power, No. 55 Atlas.
Band Saw, 36" Sidney.
Band Saw, 36" West Side.
Bolt Cutters, 1" and 3" Acme.
Bolt Threading Machines, 1" and 1½" Landis.
Boring Mill, 76" Bullard vertical, 2 swivel heads.
Boring Mill, 72" and 96" Bickford vertical, 2 swivel heads.
Boring Mill, 36" Niles Tool Works, 2 swivel heads.
Boring Mill, 24" Bullard vertical, rapid production type.
Broach, No. 3-B J. N. LaPointe.
Centering Machine, No. 1 Pratt & Whitney.
Hack Saw, power, 6x6" Peerless high speed.
Hack Saw, power, 6"x6" Racine.
Hack Saw, power, 8x8" Atkins Kwik-Kut No. 7.
Hammers, 40 and 60 lb. Bradley rubber cushioned helve.
Hammer, 30 lb. Bradley compact.
Hammer, 600 lb. Chambersburg steam.
Keyseater, No. 1 Catlin, belt drive.
Keyseater, No. 00 Baker Bros., belt drive.
Press, power forcing, 15-ton Lucas.
Press, No. 6 Chas. Leffler, o. b. i.
Press, power, P-4 Ferracute.
Riveting Hammer, No. 2-A High Speed.
Saw, cold, Nos. 1 and 4B Cochrane-Bly.
Saw Table, Famous.
Shaper, wood, Buss No. 9, 2-spindle, motor driven.
Shear, power squaring, 42" No. 242 Niagara.
Slotter, 12" Sellers.
Spot Welder, electric, Toledo, 24" throat.
Spot Welder, electric, Winfield, 12" throat.
Tapping Machines, Nos. 1, 2 and 2BG Garvin automatic.

And Many Others. Send us your Inquiries.

EASTERN MACHINERY CO.

We also Buy machinery.

SPECIALS—

One—No. 614 Baker Brothers Heavy Duty High Speed Drill, arranged for constant speed motor drive, but without motor, will drive largest size high speed drills to the limit of their efficiency in steel; will bore with great efficiency in steel up to 16", distance center of spindle to face of column 22", distance end of spindle to base 56", length of feed 33", least diameter of spindle 7", diameter of spindle sleeve 10", has 12 feed changes and 8 speed changes, floor space 8'x 5', net weight 22,000 lbs.

This Drill is practically new, and the present factory price is approximately \$8000.00—

Our Price, \$3000.00

One—No. 519 Baker Brothers Horizontal Heavy Duty Drilling and Boring Machine, horizontal type, will drive 5" high speed drills to the limit of their efficiency in steel, capacity for boring and enlarging in steel and cast iron to 14"; arranged for constant speed motor drive, but without motor, 8 speed changes, 12 drilling and 12 reaming feeds, spindle nose 5 1/4", No. 6 Morse Taper. The present factory price on a new machine is approximately \$5000.00—

Our Price, \$1500.00

*Full details and photographs covering above Machines
will be sent upon request*

O. 08 E. Pearl St., CINCINNATI, O.
ry. What have you to Sell?

SIMMONS *New and Used* MACHINE TOOLS

ATTRACTIVE PRICES

MONEY BACK GUARANTEE

TESTED BEFORE SHIPMENT

Boring Mills

- 2-24" Bullard New Era.
- 1-36" Bullard New Era.
- 1-36" Bullard rapid production.
- 1-42" Bullard two swivel heads.
- 1-54" Colburn two swivel heads.
- 2-72" N.-B.-P. rapid traverse.
- 1-96" Cincinnati vert. rapid trav.
- 1-84" Pond extra hvy., two heads.
- 1-10" Pond two heads, motor dr.
- 1-10-16" Niles vert. exten. mill.
- 1-5" Bar Beaman-Smith horiz.
- 1-No. 3 Barrett cylinder.
- 1-No. 2 Rockford horizontal.
- 1-No. 2 Rochester horizontal.
- 1-No. 0 Niles horizontal.
- 1-7" Bar Newton horizontal mill.

Lathes.

- 5-10x5 Pratt-Whitney tool room.
- 3-14x6 American heavy duty.
- 3-14x6 Hendey, tool room.
- 6-16x6 Hendey, tool room.
- 1-18"x8" Hendey tool room.
- 2-18x8 Greaves-Klusman grd hd.
- 1-18x8 Lodge-Shipleigh heavy duty.
- 1-18-36x12" Rahn-Larmon Gap.
- 1-20-42x6" Fay Scott Gap.
- 1-25x12 LeBlond heavy duty.
- 1-26x22 Boye-Emmes motor drive.
- 1-37x18" LeBlond heavy duty.
- 2-30x12 American geared head.
- 1-30-60x12" McCabe 2 in 1.
- 1-30x14 Lodge-Shipleigh, cone drive.
- 1-30x20 Pond triple geared.
- 1-36x29 American geared head.
- 1-36x70 American geared head.
- 2-36x20 American geared head.
- 1-36x60 Bridgeford Boring.
- 1-42" Niles-B. Pond Car Wheel.
- 1-42x22 American geared head.
- 8-42x39 Putnam geared head.
- 1-44x34 Pond triple geared.
- 2-48x36 Pittsburgh motor drive.
- 2-50x36 Pittsburgh geared head.
- 2-54x34 Bement triple geared.
- 1-60x35 Bement triple geared.
- 1-72x56 N.-B.-P. dbl. carriage, n. d.

Shapers

- 1-25" Queen City.
- 2-24" Gould-Eberhardt.
- 1-20" American; 20" Ohio.
- 1-16" Smith-Mills; 16" American.
- 2-15" Potter-Johnston.

Grinders

- 2-No. 16 Blanchard Vertical.
 - 1-14x96 Norton Cylindrical.
 - 3-14x50" Norton Cylindrical.
 - 6-6x32 Norton Cylindrical.
 - 1-14" Pratt & Whitney Vertical.
 - 1-30x84 Diamond Face.
 - 5-No. 70 Heald Internal.
 - 1-No. 13 Brown & S. Universal.
- ## Screw Machines
- 1-25" Libby Turret Lathe.
 - 1-No. 3A Warner-Swasey Turret.
 - 3-No. 2 Warner-Swasey screw.
 - 5-2x24 Pratt & Whitney Turrets.
 - 5-18" Libby Turret Lathes.
 - 2-24" Gisholt Tur.; 1-34" Gisholt.

Planers

- 1-72x72x16" D.&H. Openside, 3 hds.
- 1-60x60x26" D. & H. Openside.
- 1-62x62x14" Cincinnati m. d., 4 hds.
- 1-36x36x20" Woodward-P., 4 hds.
- 1-36x36x12" N.-B.-P., 4 heads.
- 1-36x36x10" N.-B.-P., 4 heads.
- 4-30x30x12" N.-B.-P., 2 heads.
- 1-26x26x6" Gray, heavy duty.
- 6-24x24x10" Whitcomb-Blaisdell.
- 1-24x24x8" Whitcomb-Blaisdell.
- 1-24x24x6" Powell Hi-Speed.

Miscellaneous

- 1-2" Acme Bolt Cutter.
- 1-8" Bignall-Keeler Pipe Machine.
- 1-Imperial Type XB Air Compr.
- 1-No. 3 LaPointe Double Broach.
- 1-No. 3 Pratt-Whitney Die Sinker.
- 5-6" Gleason Gear Generators.
- 9-18" Gleason Gear Generators.
- 1-5-A Lees-Bradner Gear Hobber.
- 1-No. 13 Brown-S. Gear Cutter.
- 1-No. 13-H Brown-S. Gear Cutter.
- 9-No. 12 Barber-Colman Hobber.
- 1-No. 4-B Nazel Air Hammer.
- 1-No. 5-B Nazel Air Hammer.
- 5-50-lb. Bradley Helve Hammers.
- 1-300-lb. Bradley Helve Hammer.
- 1-800-lb. Morgan Steam Hammer.
- 1-3,500-lb. Niles Steam Drop.
- 1-5-ton Wern Rotator.
- 50-20-in. Cincinnati Rotary Tables.
- 1-4" Ajax Steel Bed Upsetter.
- 1-24" Acme Upsetter.
- 1-No. 77 Bliss Geared Press.
- 1-No. 55 DDG Ferracute Press.
- 1-No. 374 Bliss Press.

Simmons Machine Tool Corp.

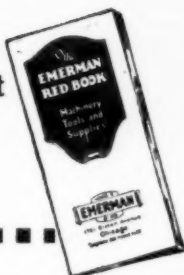
NEW YORK
149 Broadway

ALBANY
1212 Troy Road

BUFFALO
88 Exchange St.

**A Few Machine Tools
Not Listed in Our Recent**

RED BOOK



Broaching Machine, No. 4 LaPointe.....	\$ 575
Drill Press, 20" Champion, New.....	129.
Drill Press, 25" Barnes.....	125.
Gear Hobber, No. 12 Barber-Colman.....	1150.
Gear Hobber, No. 3 Barber-Colman.....	850.
Grinders, No. 65 Heald.....	675.
Grinders, 6x32 Norton.....	475.
Grinders, 84" Diamond.....	1750.
Keyseater, No. 3 Baker.....	750.
Lathe, 14"x 6' Hendey.....	500.
Lathe, 24"x10' Hendey.....	1150.
Miller, No. 1 Ohio Plain.....	375.
Miller, No. 3 LeBlond Plain.....	550.
Miller, No. 4 Brown & Sharpe Plain.....	875.
Radial Drill, 4' American.....	675.
Riveter, No. 6 Whiting Stake.....	975.
Screw Machine, 7/8" Gridley, Motor Drive.....	875.
Screw Machine, 2 1/4" Gridley, Sgl. Spdl.....	375.
Shaper, 24" Cincinnati, S. P. D.....	875.

NOTE TO DEALERS: These prices
subject to your regular discount

Louis E. Emerman Co.
1761 Elston Ave., Chicago, Ill.

EVERY MACHINE—

ENGINE LATHES

- | | |
|---|---|
| 14"x 6' LeBlond, l. c. g. and chuck. | 18"x 7' Fulton heavy duty friction |
| 14"x 6' Hamilton. | hd. pl. turning lathe, pan bed, dbl. |
| 14"x 6' Bradford, c. r., q. c. g. | tool post and countershaft, new. |
| 14"x 6' Porter, compound rest and | 18"x 8' Prentice, compound rest, |
| taper attachment, l. c. g. | l. c. g., chuck. |
| 16"x 6' South Bend, compound rest, | 18"x 8' Porter, 4-step cone, s. b. g., |
| complete. | q. c. g. engine lathe, complete, new. |
| 16"x 8' Lodge & Shipley, old style, | 18"x 8' Superior, c. r., q. c. g. |
| compound rest, q. c. g. | 18"x 10' Star, 4-s. c., s. g., with 16" |
| 16"x 8' Hendey, c. r. and t. a., q. c. g. | 4-jaw ind. chuck. |
| 16"x 8' Bradford, c. r., loose change | 20"x 8' Reed friction head, with |
| gear. | turret on carriage. |
| 16"x 8' Monarch, compound rest, | 20"x 10' Boye & Emmes, c. r., q. c. g. |
| standard pattern. | 24"x 10' Greaves & K., c. r., q. c. g. |
| 18"x 8' Boye & Emmes, c. r., q. c. g. | 24"x 10' Boye & Emmes, c. r., q. c. g. |

TURRET LATHES AND SCREW MACHINES

- | | |
|--|--|
| 3"x24' Jones & L. g. h. flat turret. | No. 55 Nat'l Acme 4-spdl. auto., (3)' |
| No. 00 Brown & Sharpe auto., (2). | 24" Cleveland model "A" auto- |
| No. 0 Brown & Sharpe auto., (2). | screw mch., with 5-hole turret. |
| 12" W. & S., friction head. | 14" Cleveland model "A" auto. |
| 12" W. & S., friction head, with set- | screw mch., with 5-hole turret. |
| over turret. | 18" Libby, factory rebuilt. |
| 14" W. & S., friction head, (2). | No. 2-G Brown & Sharpe auto- |
| 16" W. & S., friction head. | matics (2). |
| No. 4 Warner & Swasey, p. h., a. c. | No. 2 Brown & Sharpe turret form- |
| and b. f. | ing (2). |
| No. 2 Warner & Swasey, p. h., a. c. | 1"x7" Millholland, pl. hd., auto. ck., |
| and b. f. | bar fd., hand fd., cross slide and |
| No. 4 Warner & S., g. f. h., a. c. and | turret, complete, new. |
| b. f. | 1"x7" Millholland turret screw mch., |
| No. 3 Foster g. f. h. turret screw mch., | pl. hd. auto. ck., bar feed hand fd. |
| with p. f. carriage and turret. | cross slide, with power fd. tur., new. |

DRILLING MACHINES

- | | |
|--|--|
| 3' American sensitive radial with | 14 2-spindle Henry & W., h. s., b. b. |
| t. a. and elevating table. | 14" 4-spindle Henry & W., h. s., b. b. |
| 21" Aurora W. & L., square base, | No. 22 Colburn, sgl. sp., hvy. duty, |
| stationary head. | 14" cap., with solid spindle and |
| 25" W. F. & J. Barnes, sliding head, | flange for receiving multiple drill |
| back geared and power feed. | heads, new, (2). |
| 6' Western, with speed box, tap. att. | No. 44 Colburn, sgl. sp. heavy duty, |
| 3' Dreses, cone drive, tap. att. | 24" cap., with solid sp. and flange |
| 5' American triple purpose, with | for receiving multiple drill heads, |
| speed box. | new, (2). |
| 26" Cincinnati sliding head, b. g. | Colburn horizontal duplex drill, 24" |
| and p. f. | cap. with rotating table, arranged |
| 24" Aurora sliding hd., b. g. & p. f. (2). | for motor drive, new. |
| 38" Niles, sliding hd., b. g. and p. f. | No. 34 Demco high speed bench |
| 20" Superior W. & L. square base, | drill with C spindle, new. |
| stationary head. | |

The Strong, Carlisle & Hammond Co.

Guaranteed—Prices Right

MILLING MACHINES

- | | |
|---|---|
| <p>No. 0 Bickett, hand, bench type, (3).
Toledo hand milling machines.
No. 1½ B. & S., cone dr., universal, complete.
No. 1 Brown & Sharpe vertical.
No. 4 Brown & S., cone drive, univ.
No. 3-B heavy B. & S. plain, constant speed, (2).
No. 1½ B. & S. cone drive, univ.</p> | <p>Type C Becker vertical, constant speed drive.
25"x7½"x18" Oesterlein universal, vertical attachment.
No. 2-B B. & S. constant speed plain, taper nose spindle with Dickow dividing head.
No. 1-V Brown & Sharpe plain.
No. 12 B. & S. manufacturing.</p> |
|---|---|

METAL CUTTING TOOLS AND SQUARING SHEARS

- No. 3 Atkins band saw, belt driven, new, (2).

GEAR CUTTERS AND HOBBERS

- | | |
|--|---|
| <p>No. 18 Gould & Eberhardt vertical, for spur & spiral.</p> | <p>36" No. 3 Brown & Sharpe automatic</p> |
|--|---|

SHAPERS AND PLANERS

- | | |
|--|--|
| <p>16" American, b. g. c., complete.
20" Hendey friction, (3).
16" Smith & Mills, back grd. crank.
22"x22"x 5' Putnam planers, (2).
24"x24"x5' Cincinnati, one head.</p> | <p>30"x30"x10' Woodward & Powell, three heads.
48"x48"x12' Gray, three heads.
72"x72"x26' Fitchburg, four heads.</p> |
|--|--|

CENTERING MACHINES

- Centering machines, single spindle Cadillac, (2).

GRINDERS

- | | |
|--|---|
| <p>No. 1 Brown & Sharpe universal.
No. 3 Brown & Sharpe universal.
No. 1 Bath universal.
No. 13 B. & S. univ. and tool, (2).
No. 3 Diamond wet tool grinder with drop apron, new.
No. 4 Diamond wet tool grinders with drop apron, new, (2).
No. 10 Brown & Sharpe plain.
No. 14—30" B. & S. plain cyl., (2).
No. 14—48" B. & S. plain, (2).
6"x30" Norton plain, (2).
No. 24 Landis plain.
Abrasive surface grinder with magnetic chuck, generator and demagnetizer.
8" Heald rotary surface grinder with magnetic chuck.</p> | <p>No. 6-A Bryant internal.
No. 1 LeBlond cutter grinder.
J. B. Point "Yankee" drill grinders, complete, new, (2).
Type "DE" Hisey-Wolf internal.
No. 11 Brown & Sharpe pl. grinders.
Plain emery wh'l stand with column.
No. 1 Woods cutter and reamer grinder, complete, new.
No. 2 Woods cutter and reamer grinder, complete, new.
No. 2½ Woods cutter and reamer grinder, complete, new.
20" Whitney wet tool grinders, complete with countershaft, new, (2).
C3A Grand Rapids duplex drill grinders with wet att., new, (2).</p> |
|--|---|

MISCELLANEOUS

- | | |
|---|--|
| <p>Bolt cutter, 14" National 2-spindle, with Landis heads.
Boring mill, 52" Bullard vertical, two swivel heads.
Boring mill, 72" Niles vertical, two swivel heads.
Broach, No. 2 double Lapointe.</p> | <p>Filing machine, No. 2 Cochrane-Bly.
Marking machine, Etchograph.
Oil extractor, No. 150 Curtis.
Pipe machine, 8" Jarecki, No. 88.
Pipe machine, 4" Oster.
Profiler, No. 12, 2-spdl. P. & W. vert.
Scleroscopes, Shore, (4).</p> |
|---|--|

Cleveland, Ohio; Detroit, Michigan

Bath's Guaranteed

Boring Mills—Vertical

- 42" Bullard 2 swivel heads.
- 42" King 2 swivel heads, rapid traverse.
- 44" Baush, 2 swivel heads.
- 48" and 54" Colburn boring mills.
- 72" Pond, 2 swivel heads, heavy.
- 96" Niles, 2 heads, very good.

Boring Mills—Horizontal

- 3" bar Binsse, table type.
- 3½" bar Rochester, floor type.

Cranes

- 5 to 25 ton, all spans, both a. c. & d. c.

Drills

- 4-spindle Moline rail drill, 1½" capacity.
- 3" Prentice radial.
- No. 1, 8" wall radial.
- 28" Cincinnati, sliding head.
- 30" Aurora, sliding head.
- 24" No. 25 Foote-Burt, with compound table.

Forging Machines and Bulldozers

- 1½", 2½" and 3" Ajax Upsetters.
- ¾", 1½" and 1½" Acme steel bed Upsetters.
- 4 & 5 Williams & White Bulldozers.
- 250-ton Mesta Steam Hydraulic, 85%.

Grinders

- 84" Diamond surfacer.
- 18x96" Norton plain.
- 17x36" Landis universal.
- No. 2 Norton universal tool and cutter.
- No. 20 Safety electric floor grinder, 10 HP motor, 32"x4" wheels.
- Various electric floor grinders and grinding stands.
- No. 2 Diamond surface grinder.

Keyseaters

- No. 00 Baker, capacity ¾"x8", tilting table.
- No. 1 Baker, capacity 1"x12", tilting table.
- No. 5 Mitts & Merrill, 25" str., cap. to cut keyways up to 3½" wide.
- No. 2 Baker Bros. 2"x18", tilting table.
- All Keyseaters have large equipment.

Lathes

- 14" to 18"x6'-9" beds, tool room.
- 20"x10' Boye & Emmes, quick change, double back geared.
- 26"x14' Greaves-Klusman lathe.
- 30"x14' Boye & Emmes, double back geared.
- 36"x14' Schumacher & Boye, triple geared.
- 48"x26' Bridgeford, grd. hd., t. a.
- 48"-60"x34' Houston, Stanwood & Gamble, grd. hd., mtr. dr.
- 60"x20' American, triple geared.

CYRIL J. BATH & CO., E. 70th • Ma

Cleveland Stock

Hydraulic Equipment

175-ton R. D. Wood 4-column Flanging Press.
Morgan Hydraulic Riveter, 8' 6" gap.
Wood and Bement-Miles Hydraulic Riveters, 10' 6" gap.

Tumbling Barrels

Several sets 18"x48" steel lined, square, with roller bearings and exhaust.

Milling Machines

Style "B" Gooley & Edlund, table 54"x11½", (2).
20"x7½"x18" Oesterlein plain, belt drive.
No. 1 Rockford plain, back geared, 22"x6½"x15".
No. 2-B heavy Brown & Sharpe plain, 28"x10"x19".
No. 3 Hendey, geared head, plain.
No. 4 Cincinnati high power miller, table 64½"x16½".
Becker miller, model "C", table 14"x54".
No. 243 Pratt & Whitney Die Sinkers.

Planers and Shapers

22"x24"x57" Fitchburg, single head.
30"x30"x8" Gray, single head.
60"x60"x20" Cincinnati, 4 heads, 3 speed, very good.
48"x48"x14" Hamilton, 4 heads.
12" Springfield, crank shaper.
24" Rockford, Gould & Eberhardt, Queen City, and American shapers.

Punches and Shears

84" throat, Long & Allstatter, capacity about ¾" thru ¾".
Kling Bros. horn press, 60" horn, flywheel 50" dia. 6½" face.
48" throat No. 4 Southwark, capacity 2"x1¼".
36" throat Lennox rotary shear, capacity about ½" plate.
15" throat No. 14 Williams & White.
Lennox rotary bevel shear, ¾" capacity.
76" Multiple punch, shear or press, ⅝" capacity.

Turret Lathes and Screw Machines

3"x36" Jones & Lamson.
No. 4 Bardons & Oliver.

MISCELLANEOUS

Acetylene Generator.
Blower, No. 4 Root, motor drive.
Blowers, Nos. 1 & 2 Buffalo Forge.
Bolt cutter, Acme, 1" capacity.
Chain Hoists, ½, 1, 1½, 4 & 6 ton.
Cold Saw, No. 4 Cochrane-Bly.
Gear Hobber, 5-A Lees-Bradner.

Gear Cutter, 36" Gould & E.
Hammer, 100 lb. Bradley helve.
Pipe Machine, 4" Jarecki.
Press, No. 66 Consolidated, 4" str.
Press, 30 ton Lucas forcing.
Slotter, 48" Niles-Bement-Pond, motor drive.

Machinery Av., N. E., Cleveland, O.

Good Used Machines

PRESSES

BLISS Nos. 1½, 3½-A and 3¾-B Toggle Presses.
BLISS No. 4 Stiles Press, flywheel type.
BLISS No. 31 Overhanging Flywheel Press.
BLISS No. 61 Flywheel Press, weight 2000 lbs.
BLISS Stiles No. 3 Geared Press.
BLISS No. 9-C Double Crank Straight Side Press.
BLISS No. 74½ Straight Side Press.
BLISS Cut Back Frame No. 73¾ Press.
TOLEDO No. 93-C Double Crank Geared Press.
TOLEDO No. 96-F Double Crank Geared Press.
TOLEDO No. 55½ Straight Side Trimming Press.
TOLEDO No. 666 Knuckle Joint 1000-ton Press.
TOLEDO Nos. 164½ and 494-C Toggle Drawing Presses.
CONSOLIDATED No. 56 Flywheel Trimming Press.
CONSOLIDATED No. 165 Flywheel Double Crank.
FERRACUTE EG-6, 100-ton Embossing Press.
FERRACUTE No. DGG-55 Straight Side Reducing Presses.
FERRACUTE No. DGG-56 Straight Side Reducing Presses.
ZEH & HAHNEMANN No. 20 Percussion Press.
V. & O. No. 61 Straight Side Geared Press.
WATERBURY-FARREL No. 52 S. S. Geared Press.

STRUCTURAL SHOP EQUIPMENT.

WILLIAMS-WHITE Nos. 0, 1, 2, 4, 6, 7, 28 Bulldozers.
CANTON No. 5 Alligator Shear, 3rd capacity.
CLEVELAND EF Punch, 12th throat.
CLEVELAND Punch Style "G", 42th throat, capacity 2nd thru 1st.
TOLEDO Squaring Shear 8th, ¾th capacity, 15th gap.
ROCK RIVER Punch 30th throat, 1st thru 1st, motor drive.
LONG & ALLSTATTER Punch, 2nd thru 1st, arch. jaw.
WILLIAMS & WHITE No. 14 Double End Punch and Shear,
25th throat, capacity 1¼th thru 1st.
No. 34 LENNOX Rotary Bevel Shear, capacity ¾th, motor drive.
No. 5 QUICKWORK Rotary Shear, motor drive.
No. 3 QUICKWORK Rotary Shear, with circle shear attach.
HILLES & JONES No. 3 Guillotine Shear, Cap. 2½th sq.
HIGH SPEED Riveting Hammers, 3-A, 4-A, 5-A & 6-B.
SOUTHWARK Hydraulic Riveter 75-ton, gap 8th.
HANNA 20-ton Pneumatic Riveter, 5th gap.
HANNA Riveter, 50-ton, 8th gap.

D. C. OVIATT & COMPANY, 21

Some Rarely Available

FIFIELD Lathe, 34" swing, 24' bed.
LIBBY 26" Turret Lathe, 7/8" hole in spindle.
AJAX 3 1/2" Upsetter, Steel Bed.
BERTSCH Shear, 48"x7/4" capacity, 15" throat.

UNUSUAL EQUIPMENT.

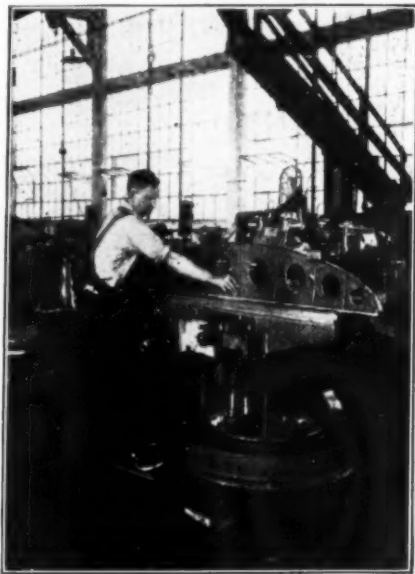
AMERICAN 24" Crank Shaper.
ERIE 800 lb. Single Leg Steam Hammer.
BEAUDRY 50 and 200. lb Power Hammers.
BRADLEY 75 lb. Upright Helve Hammer.
GARVIN No. 2 Back Geared Automatic Tapping Machine.
LANDIS 1" Double Head Bolt Cutters.
LANDIS 2" Bolt Cutter, Lead Screw.
LANDIS 1 1/2" with and without lead screw, (2).
GISHOLT 24" Lathe, 6/8" hole in spindle, m. d.
18" LIBBY Lathe, motor drive.
WARNER & SWASEY No. 4 Turret Lathe.
CINCINNATI-ACME 3 1/4"x36" Flat Turret Lathes.
CLEVELAND 1/2" Model "B" and "G" Automatics.
COLBURN D-3 Drill Press, gap 3" steel.
NILES 42" Car Wheel Borer, motor drive.
GREENLEE Universal Joint Borer, 12' table with automatic feed, 12-spindles, motor driven.
INGERSOLL-RAND Compressor, N. E. I. 12 1/4"x12".
AMERICAN TOOL & MACHINE CO. Oil Separator, large size.
CHICAGO Pneumatic Air Compressor 10"x10".
B. & S. No. 3-36" Automatic Gear Cutter.
BRIGGS Millers 34", type B, (10).
DINGS Magnetic Separator, with M. G. Set.
ROOTS P. H. & F. M. Blower, size 5, 14" exhaust with extension base for motor drive.
DILLON 7 1/2 H. P. Electric Grinder, ball bearing.
MOLINE 13-D "Hole Hog" 9-spdl., No. 4 Morse Taper, 12x84" tbl.
COLBURN 36" Vertical Turret Boring Machine, swivel turret slide, 30" diameter, 3 jaw chuck in table.
EUCLID Electric Traveling Crane, 3-ton capacity, 41' span.
LUCAS 30-Ton Power Forcing Press.
FEDERAL Spot Welder, Nos. 312-B and 320-B.

Some of the Above Equipment

is located in the plant of the Kenova Mine Car Co., Kenova,
West Virginia, which we are liquidating.

21 Lakeside Ave., **CLEVELAND, OHIO**

Machines of Quality



When in the market for a good
used tool, why not consider a
MOTCH & MERRYWEATHER
Guaranteed Rebuilt Machine ?

The discriminating PURCHASER will find our Rebuilt Tools MACHINES OF QUALITY, backed by our GUARANTEE

BORING MILLS

- 42" Bullard Vertical Turret Lathe, New Era Type, with lubrication system and threading attachment.
- 42" Ginholt Rapid Power Traverse, one turret head, plain head.
- 51" Bullard Standard Turning and Boring Mill.
- 54" Bullard Boring and Turning Mill, rapid production type.
- 81" Cincinnati Boring Mill, rapid traverse, 2 swivel heads.
- No. 1 Cleveland Horiz., sgl. pulley dr.
- No. 0 Giddings & Lewis Horizontal, single pulley drive.

DRILLS

- No. 217, 310, 314 Baker.
- 32" Cincinnati Bickford, with tap. att.
- 36" American Sensitive High Speed Radial, tapping attachment.
- 3½" American Pl. Radial, gr. box dr.
- 6" American Radial, gear box drive.

GEAR CUTTERS

- 36S Gould & E. Spur Gear Cutter.
- No. 12 Barber-Colman Gear Hobbers.
- 6" Gleason Bevel Gear Generator.
- 11" Gleason Bevel Gear Generator.
- 60" Brown & Sharpe Gear Cutter.
- 72" Brown & Sharpe Gear Cutter.

GRINDERS

- 6x32 Norton.
- 10x50 Norton.
- Taylor & Fenn Internal Grinder.
- No. 2 Brown & S. Surface Grinder.
- No. 10 Blanchard Surface Grinder, motor in head.
- No. 16 Blanchard, Floor Motor Drive, no motor.
- No. 22 Heald Rotary Surface Grinder, 12" magnetic chuck.
- No. 255 Heald Rotary Surface Grinder, 8" or 12" magnetic chuck.

This is a partial list of our equipment. In addition to above list we have several hundred machines going through the process of rebuilding.

A Used Machine is as Dependable as the Dealer Who Sells It

THE MOTT & MERRYWEATHER MACHINERY CO.

CLEVELAND

DETROIT

CINCINNATI

PITTSBURGH

LATHES

- 14x6 Hendey, with taper attachment and relieving attachment, q. c. f.
- 16x8 LeBlond, taper att., cone drive.
- 18x8 Hendey, yoke type, cone dr., t. att.
- 20x10 Reed-Prentice, geared head, single pulley.
- 24x12 Schumacher & B., q. c. f., c. dr.
- 36x10 American, geared head, with taper attachment.
- 36x28 Lodge & Shipley, sel. hd., t. att.
- 42x32 American, geared head, with 35 h. p., d. c. motor.

MILLING MACHINES

- No. 1-B Brown & Sharpe plain, single pulley drive.
- No. 2-A Brown & Sharpe, Universal, single pulley drive, dividing head.
- No. 3 Cincinnati Plain, cone drive.
- No. 3 Cincinnati Universal, with dividing head, single pulley drive.
- No. 4 Cincinnati Plain High Power, single pulley drive.
- No. 4 Cincinnati Universal, with dividing head, cone drive.
- No. 3 Cincinnati Vert., sgl. pulley dr.
- No. 4 Cincinnati Vert. sgl. pulley dr.
- No. 5 Cincinnati Horizontal, rectangular overarm, single pulley drive.
- No. 1-B Milwaukee Universal, double overarm, dividing head, vertical att.

PLANERS

- 24"x24"x10' Gray, 1 head on rail.
- 48"x48"x12' Cleveland Openside, 2 hds. on cross rail, 1 side hd., belt dr.

SHAPERS

- 15" Potter & Johnston Univ., cone dr.
- 16" Ohio, 20" Cincinnati, 24" Gould & E., 24" and 28" Amer., cone dr.

TURRET LATHES

- No. 4 Warner & S., pwr. fd. to turret.
- No. 3-A W. & S., comp. ck. equip.
- 2½x26 Cincinnati Acme, cone drive.
- 3½x36 Cincinnati Acme, geared head.

If Listed Here—It's Good Machinery

Prices are "Right"

MILLING MACHINES

- 1—Becker No. 7 duplex.
- 1—Hendey No. 2G universal.
- 3—Cincinnati Nos. 1 $\frac{1}{2}$ & 2 Universal.
- 7—B. & S. Nos. 3A & 2 Universal.
- 4—Briggs "B" plain miller.
- 1—Briggs type "A" manufacturing.
- 2—Rockford No. 1 $\frac{1}{2}$, No. 2.
- 4—Cinti. Nos. 2, 3 & 4 pl., cone dr.
- 1—B. & S. Nos. 2, 2B, 3B, 4 plain.
- 1—B. & S. No. 13-B plain.
- 11—Becker Nos. 4B, 2B, 5C, C vert.
- 9—P. & W. 4 $\frac{1}{2}$ x12, 6x48, 6x50 thread.
- 4—Lees Bradner Nos. 4, 6 thread.
- 25—P. & W. No. 5 auto.
- 30—P. & W. No. 4 spline.

GEAR CUTTERS

- 7—B. & S. 3x36, 3x26, 4x36.
- 3—G. & E. No. 18-H.
- 20—Fellows Nos. 6, 61, 615.
- 20—Gleason bevel, 6", 11", 18".
- 5—Harber-Colman No. 3.

BORING MILLS

- 1—Bullard 34" New Era type.
- 1—Bullard 61" Maxi-mill, m. d.
- 1—Bullard 24" rapid prod.
- 1—Cleveland No. 1 horizontal.
- 1—Colburn 54", 2 swivel heads.
- 1—Ridgeway 54" vertical, 2 heads..

SCREW MACHINES—Automatic

- 16—B. & S. Nos. 0, 2, 2G full auto.
- 14—Gridley 4-spindle 4", 1 $\frac{1}{2}$ ", 1 $\frac{1}{4}$ ", 7/16", 2 $\frac{1}{2}$ ".
- 2—Gridley 4 $\frac{1}{2}$ ", 3 $\frac{1}{2}$ " s. s.
- 3—Cleveland 8", 6", 1 $\frac{1}{2}$ ", 2", 2 $\frac{1}{2}$ ", 7 $\frac{1}{2}$ " "A".
- 1—Cleveland 8 $\frac{1}{2}$ ", 5", 1 $\frac{1}{2}$ " "B".
- 1—New Britain 1 $\frac{1}{2}$ x7, 1x7 bar.
- 9—New Britain Nos. 24, 33.
- 2—National Acme Nos. 52, 54.

DRILLS—Multiple Spindle

- 1—Natco No. 11.
- 1—Natco No. 14.
- 2—Baush No. 2, 24-spindle.
- 1—Moline No. 5-D, 6-spindle.
- 12—P. & W. Nos. 11, 12, 13.

DRILLS—Upright and Radial

- 2—Colburn Nos. 2 and 4.
- 1—P. & W. No. 1 gun barrel.
- 2—New Turner No. 3 vertical.
- 6—Baker No. 319 and 314.
- 6—Cincinnati 24" sliding head.
- 1—American 4' univ. radial.

- 1—Baush 6' radial.

- 1—Niles-Bement-Pond 96" Ridge-way, m. d. pl. rad.

GRINDERS

- 1—Queen City 14x72 plain.
- 7—Norton 6x32, 10x36, 18x96.
- 4—B. & S. No. 11, 10 plain.
- 4—Cincinnati No. 2, 12x36.
- 1—Springfield 12x12x48 vertical.
- 1—W. & M. No. 3 surface.
- 1—Persons & Arter 12" surface.
- 2—Landis 14x48; 16x48 crank.
- 1—Fitchburg 12x54.
- 1—Cincinnati No. 2 universal.
- 11—Bryant No. 20 chucking.
- 2—Bryant No. 15, dbl. spindle.
- 25—Heald Nos. 65, 60 and 70.
- 1—Van Norman No. 34.
- 2—Gidding & L. No. 12 teromatics.

LATHES

- 4—Seneca Falls 12x6, q. c. g.
- 3—Davis 12"x5", q. c. g.
- 5—American 14x6, 16x8, s. p. d.
- 1—Hendey 18x8.
- 10—New South Bend 15x5, 18x8 gap.
- 2—Mueller 18x8, q. c. g.
- 1—American 18x10, s. p. d.
- 3—Le Blond 26x10 duplex crank.
- 1—Bridgeford 26x12", q. c. g.
- 1—Greaves-Klusman 28x10.
- 1—Johnson 30x12, motor drive.
- 1—Bridgeford 32x26", geared head., s. p. d. or m. d.
- 1—Bridgeford 42x38", hvy. duty, grd. hd., dbl. carriage, arr. for m. d.
- 2—LoSwing 34x84, 2 car. New Star Lathes, all sizes, with all att.

PLANERS

- 1—W. & P. 24x24x5, 1 head.
- 7—Putnam 26x26x 8", 2 heads.
- 1—Gray 38x38x20", 3 heads.
- 1—Putnam 48x48x12", 2 heads.

SHAPERS AND SLOTTERS

- 1—Columbia 25".
- 1—P. & W. 6" vertical.
- 3—Dill 15-18" slotters.
- 2—Stockbridge 16", 24".
- 2—Smith & Mills 16", 20".

MISCELLANEOUS

- 1—Handsaw, Napier metal.
- 1—Keyseater, Baker.
- 1—Swage, Aetna No. 5-A.

25—HENDEY 12"x5' and 6' Q. C. G. Lathes
6—CINCINNATI 24" sliding head Drill Presses
5—BRIDGEFORD 42"x35' geared head Lathes

MOREY AND CO. INC. 408 Broome St., NEW YORK, N. Y.

NEW 3 PHASE MOTORS CHEAP. 3 H. P. \$54.50; 5 H. P. \$65.50

LATHES

- | | |
|---------------------------------------|---------------------------------------|
| 12"x 5' Cleveland, geared head. | 18"x10' American, quick change. |
| 14"x 6' Carroll-Jamieson, new, q. c. | 20"x 8' American, geared head. |
| 14"x 6' Hamilton, grd. hd., motor dr. | 20"x10' Hamilton, rapid production. |
| 14"x 6' Monarch, quick change. | 20"x10' Prentice, taper attachment. |
| 14"x 8' Sidney, double back geared. | 22"x8'6" Graves & Klusman. |
| 14"x 6' Hamilton, style B. | 24"x12' Bradford. |
| 16"x 6' Monarch, motor drive. | 24"x24' Prentice, with raising block. |
| 16"x 8' Sidney, double back geared. | 8x60" & 3x60" Fitchburg, Lo-Swing. |

TURRET LATHES and SCREW MACHINES

- | | |
|---------------------------------|-------------------------------------|
| Acme 8" cap., wire feed column. | 2x24 and 3x36 J. & L. |
| No. 4 DeHance, 1 1/2" capacity. | No. 1 Foster, 15/16" capacity, (2). |
| 1 1/2" capacity Smurr & Kamen. | Warner & Swasey No. 2. |
| 1 1/2" Milholland. | No. 52 National Acme. |

SHAPERS

- | | |
|---------------------------------------|------------------------------------|
| 14" Niles, traveling head. | 16" American back geared crank. |
| 14" Steptce, crank. | 16" Cincinnati b. g., motor drive. |
| 16" American tool room. | 16" Harker back geared crank. |
| 16" O. & S., b. grd., new, low price. | 24" O. & S. back geared crank. |

PRESSES

- | | |
|------------------------------------|---|
| No. 10 and No. 15 Excelsior, foot. | Nos. 1 1/2, 2, 2 1/2 & 4 Robinson, new. |
| Nos. 5 and 6 Toledo, o. b. i. | Emco, bench, for radio parts. |
| Nos. 3-A & 5-A Willard inclinable. | Perkins, dbl. housing, wt. 4,000 lbs. |

DRILLS and RADIALS

- | | |
|------------------------------------|---|
| 3' W. E. Gang plain. | 22", 24", 26", 28" and 32", sliding hd. |
| No. 1 Baush multiple. | 6' Ceiling drill. |
| Baush 10 spindle, arranged for 16. | 4-spindle Reed sensitive. |
| Electric Drills, Black & Decker. | 44" Stover. |
| No. 4 Duntley electric. | Hole Hog, No. 66-D, 7-spindle. |

MILLING MACHINES

- | | |
|---------------------------------|------------------------------------|
| No. 1 Kempsmith universal, new. | No. 25 Becker plain, power feed. |
| No. 2 Kempsmith plain. | No. 2 H Brown & Sharpe plain. |
| No. 3 Kempsmith plain, new. | Oesterlein 24x7x18 plain. |
| No. 3 Cincinnati universal. | Briggs "A" high duty, 24x8" table. |
| No. 5-C Becker, vertical. | No. 7 Becker, Lincoln type. |

GRINDERS

- | | |
|-----------------------------------|-------------------------------------|
| Nos. 1 & 78 W. & M. surface. | No. 60 Heald cylinder. |
| 6"x18" Fitchburg plain. | Schmitt cylinder grinder. |
| 10"x36" Landis plain cylindrical. | No. 3 Ohio universal, tool and cut. |
| 12"x36" Cincinnati universal. | J B X, W. & M. tool and cutter. |
| 16"x42" Landis universal. | No. 10 Besly 18" double disc. |
| 36" and 66" Yates plate. | No. 20 Bryant, chucking. |
| No. 70 Heald internal. | Capital internal, new, 2"x2" cap. |

MISCELLANEOUS

- | | |
|--|--|
| Band saw, Clark, compound. | Hammer, 150 lb. Standard drop. |
| Band saws, Napier 4"x4", 10"x10". | Pipe machines, 2", 4" & 6". |
| Blowers, No. 6 Pickway, pressure. | Pumps, Gould triplex, 6"x8". |
| Blower, positive pressure, Leiman style "F". | Punch & shear, 1x10" throat. |
| Boring mill, Colburn No. 3, tur. hd. | Riveting hammers, High Speed |
| Boring mill, Sellers 50" car wheel. | Nos. 2, 3, 4 & 5-A. |
| Brake, 10', 18-gauge metal. | Scale, 1500 lb. Toledo, dial type. |
| Broaching mchs., 1 and 3 LaPointe. | Sceleroscope, Shore type C. |
| Compressors, 6x8, 8x8 and 9x8. | Shear, 60" Peck, Stow & W., 18 ga. |
| Drawing tables, adjust., 42"x6" top. | Shear, No. 362 Robinson. |
| Gear cutter, No. 3-26 B. & S. | Shear, No. 20 Quickwork, 30" throat. |
| Gear miller, Bilton No. 1. | Shear, circular, Pettingell, 60" thrt. |
| Hammer, No. 1 Pettingell. | Tapping machine, Acme 6-spindle. |
| | Threading mche., W. & P. 2-spindle. |

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 COLUMBUS OHIO
 Dept. H.

LOOK—THESE—OVER

LATHES

- | | |
|-----------------------------------|-----------------------------------|
| 16"x 6' Lodge & Shipley, q. c. g. | 19"x10' LeBlond, q. c. g. |
| 16"x10' Cincinnati, q. c. | 38"x28' American, geared head. |
| 16"x 6' Hendey, q. c. g. | 26"x14' American, l. c. g. |
| 18"x 8' Reed-Prentice grd. hd. | 46"x17' New Haven, triple geared. |

MILLING MACHINES

- | | |
|-----------------------------------|-----------------------------------|
| No. 2 Cincinnati universal. | No. 14 American plain. |
| No. 3 Cincinnati plain. | No. 3 Brown & Sharpe plain, (2). |
| No. 5 LeBlond plain, motor drive. | No. 3 LeBlond plain. |
| No. 14 Brown & Sharpe, plain. | No. 3 B. & S. vert., s. p. drive. |

RADIALS AND DRILL PRESSES

- | | |
|--------------------------------|---|
| 3' Bickford, cone drive. | 24" Hoefer, stationary head. |
| 4' Fosdick, s. p. drive. | 24" Aurora, sliding head. |
| 4' Bickford plain, cone drive. | 26" Hoefer, stationary head. |
| 6' Dreses, motor drive. | 1 and 2-spindle Allen, b. b. sensitive. |

PUNCH PRESSES

- | | |
|--------------------------------------|--|
| No. 18 Bliss, o. b. inclinable. (4). | No. 8 Long & Allstatter, 18" thr. |
| No. 20 Consolidated, o. b. inc. | No. 6 Whiting, single end, 12" thr. |
| No. 5 Etna, o. b. inc., 3" stroke. | No. 3 Bliss dble. crk., 36" bet. hous. |
| No. 21 Michigan horn press. | No. 6 Waterbury-Farrel, stiff back. |
| No. 24 V. & O., open back inclin. | No. 14 Bliss toggle draw. press. |
| No. 34 Toledo, stiff back. | No. 104 Badger Punch and Shear. |
| No. 31 Toledo, stiff back. | No. 64 Consolidated s. s., 18" bet. |
| No. 17 Williams & White, 24" thr. | No. 15 Toledo, 18" throat, (2). |

PLANERS AND SHAPERS

- | | |
|----------------------------------|--------------------------------|
| 24"x 6' Powell, 1 head. | 17" Smith & Mills, b. g. |
| 30"x 8' Cincinnati, 1 head. | 16" Smith & Mills, cone drive. |
| 48"x36"x12' Cincinnati, 2 heads. | 16" Ohio, b. g. shaper. |
| 24" Kelley shaper, b. g. | 16" Rockford, b. g. shapers. |
| 20" Cincinnati shaper, b. g. | 16" Gould & Eberhardt shaper. |

GRINDERS

- | | |
|-----------------------------------|---------------------------------------|
| No. 60 Heald, long table, (2). | Norton tool and cutter grinder. |
| No. 60 Heald, short table. | No. 14 Cincinnati, t. and c. grinder. |
| Thompson universal grinder. | No. 3 Ohio univ., t. and c. grinder. |
| No. 2 Brown & S. surface grinder. | No. 23 Landis, 16x42". |
| 12x48 Safety surface grinder. | 16x68 Queen City plain. |

MISCELLANEOUS

- | | |
|--|--|
| Bending rolls, 48" Niagara. | Gear cutter, No. 13 B. & S., spur & bevel. |
| Bolt cutters, 24", 14" & 1" Acme. | Keyseater, No. 1 Baker. |
| Boring mill, 30" Bullard, cone drive, turret head. | Millers, hand, (6). |
| Boring mill, 36" Gisholt turret head, cone drive. | Presses, 30 & 50 ton Lucas forcing. |
| Boring mill, 42" Bullard vertical. | Press, 44" Wood hydraulic tire press. |
| Boring mill, Fosdick 3" horizontal. | Shear, 60" power square, 14 gauge. |
| Boring mill, 18" Niles, 2 heads. | Sheet metal cutter, No. 1 Gray. |
| Brake, hand, 10' Robinson, 16 gauge. | Slotter, 10" Niles vertical. |
| Chain hoists, various sizes. | Tooth rounder, 12" Ingle. |
| Hammer, steam, 800 lb. Niles. | Turret lathe, No. 1B Foster univ. |
| | Turret lathe, No. 2 W. & S. (2). |

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BARGAINS

LATHES

- 1—54"x44"x18' Johnston.
- 1—51"x20' LeBlond.
- 4—36"x30' Pittsburgh Geared Hd.
- 1—30"x34"x12' L. & S. Sel. Hd.
- 1—28"x16' Bridgeford.
- 21—26"x10' Canada.
- 12—25"x12' LeBlond.
- 1—24"x27"x18' L. & S. Sel. Head.
- 1—24"x12' Reed Prentice Grd. Hd.
- 9—24"x11' Cisco.
- 10—21"x10' LeBlond.
- 2—20"x8' LeBlond.
- 1—18"x14' American Geared Head.
- 1—18"x14' Reed-Pren. Geared Hd.
- 1—16"x8' American Gd. Hd.
- 1—16"x8' Monarch.
- 3—16"x6' Walcott.
- 1—16"x6' Sidney.
- 2—14"x8' Pratt & Whitney.
- 2—14"x8' Carroll-Jamieson.
- 2—14"x8' Carroll-Jamieson.

MILLERS

- 2—No. 6 Becker Vertical.
- 1—No. 5-C Becker Vertical.
- 5—No. 3 Brown & Sharpe Vert.
- 1—No. 2B Milwaukee Vertical.
- 1—No. 3-B Milwaukee.
- 3—No. 3 Kempsmith Plain.
- 1—No. 2-B Hvy. Brown & Sharpe.
- 1—No. 2 Cincinnati Plain.
- 1—No. 3-B Milwaukee Universal.

PLANERS

- 1—72"x56"x36' Cincinnati.
- 1—60"x48"x30' Hamilton.
- 1—42"x42"x22' Niles-Bement-Pond.
- 3—36"x36"x18' Cincinnati.
- 1—36"x36"x12' Woodward & P.
- 1—36"x36"x12' Gray.
- 1—30"x30"x14' N. B. P.
- 1—30"x30"x8' N. B. P.

PRESSES

- 1—96-G Toledo Double Crank.
- 2—No. 56 Ferracute.
- 1—No. 163½ Toledo Toggle.

BORING MILLS—Vertical

- 5—72" Gisholt.
- 1—72" Cincinnati.
- 1—52" Gisholt.
- 1—48" Colburn.
- 1—30" Bullard.
- 1—24" Bullard Rapid Production.

BORING MILLS—Horizontal

- 1—No. 1½ Beaman & Smith.
- 1—No. 1½ Giddings & Lewis.
- 1—3-A Universal.
- 5—No. 1 Barrett.
- 6—2" Bar Rockford.

DRILL PRESSES

- 1—No. 30 Natco.
- 1—No. 310 Baker.
- 1—No. 24 Foote-Burt.
- 1—22" Barnes all geared.
- 1—20" Leland-Gifford.

SLAB MILLERS.

- 6—24"x24"x12' Ingersoll.
- 1—24"x24"x8' Ingersoll.
- 1—24"x13"x20' Ingersoll.
- 1—32"x32"x12' Ingersoll.

GRINDERS

- 4—22" P. & W. Vert. Surf.
- 1—20"x96" Landis.
- 3—14"x50" Norton.
- 3—10"x72" Norton.
- 3—10"x36" Norton.
- 6—6"x32" Norton.
- 1—No. 70 Heald.

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BORING MILLS:	36" American.....	\$350.
	42" Bullard Vertical.....	850.
	64" Betts Vertical.....	650.
DRILLS:	12" Cincinnati Hi-speed.....	
	20" Silver B. G.....	\$ 65.
	24" Weigel B. G.....	350.
	24" Sibley B. G.....	
LATHES:	36" Aurora.....	
	12"x5' Seneca Falls.....	\$ 90.
	18"x 8' 6" Prentice.....	
	18"x 8' Pratt & Whitney.....	
	24"x10' Putnam t. a.....	
	24"x12' Reed, h. s.....	
	24"x12' New Haven.....	
	26"x16' Prentice taper attachment.....	
	32"x18' Bridgeford geared head.....	
	36"x17' Gleason Triple Geared.....	
	24" Libby Turret.....	
	24"x6' Gisholt Turret, 6¼" hol. spdl.....	\$850.
	Lewis Roll Lathes.....	
MILLING MCHES.:	No. 1 U. S. Hand.....	\$110.
	No. 2M Cincinnati Plain.....	
	No. 2 Kempnith Plain.....	
PUNCH & SHEAR:	Caneby-Otto, hand power, ½"x½".....	\$ 45.
	No. 5 Long & A., d. e., 10" throats, cap. ⅞" thru ⅞".....	
	No. 45 Buffalo S. E. Punch & Shear.....	
	Long & Alltatter, 12" throat, s. e.....	
	Canton No. 5 Alligator, high knife.....	
	Beatty s. e., 48" throat, capacity 1¼"x1¼".....	
GRINDERS:	No. 1 Wilmarth & Morman Surface.....	
	No. 55 Heald Internal.....	
	No. 96 Ott Piston.....	
	Bridgeport Knife & Drill.....	
	D. E. Emery, 10" wheels.....	\$ 25.
SHAPERS:	28" Ohio Double Geared.....	\$300.
MISCELLANEOUS:	Air Compressor, Chicago 12x14, cap. 275 cu. ft.....	
	Blower, No. 2 Roots Rotary.....	
	Bulldozer, No. 2 Williams-White.....	
	Cold Saw, Nutter-Barnes, capacity 4½" round.....	
	Crane, Panama Portable, 2½-ton.....	\$ 60.
	Crane, Browning 20-ton, 8-wheel locomotive.....	
	Gear Cutter, No. 6 Brown & S., cap. up to 72"x13".....	
	Hammers, 80 lb. Bradley.....	
	Planer, Cincinnati 48"x44"x12'.....	
	Planer, Cincinnati 60"x60"x20'.....	
	Planer, Cincinnati 42"x36"x12', 2 heads.....	
	Planer, Detrick & H. Openside, 96"x72"x26'.....	
	Press, No. 3½ Bliss Toggle Drawing.....	
	Riveters, Allen Portable Pneumatic; Nutcracker and Hornshoe 8", 10", 12", 20" & 26" reach.....	
	Saw, Sterling Hack, cap. 9"x9".....	
	Upsetter, 1½" Acme, iron bed.....	
	Upsetter, 3" National, iron bed.....	

RUSSELL MACHINE COMPANY
1447 Oliver Building, PITTSBURGH, PA.

Selected Tools

Both as to Quality and Price

MILLING MACHINES

No. 2 Cincinnati univ., vert. and rack cutting attachments.
No. 2B Brown & Sharpe plain.
No. 3 Kempnith pl., ex. cond.
No. 3 Cincinnati plain, (2).
No. 25 Becker plain.

No. 3H LeBlond pl., vert. attach.
No. 20 Oesterlein plain.
Nos. 5 & 6 Becker verticals.
No. 3 Cincinnati Hi-Power vert.
No. 3½ Pratt & W. duplex.
No. 3 P. & W. Die Sinker.

DRILLS

24" Milwaukee, b. g., new.
28" Hamilton, b. g., cheap.
36" Cincinnati, b. g., with tapping attachment.
No. 2 Foote-Burt, 4-spindle gang.

36" Drees radial, plain.
36" Cincinnati Bickford radial, gear box drive.
24" Foote-Burt, heavy duty.
No. 1 Avey B-Bearing, bench.

PRESSES AND PUNCHES

No. 18 Bliss inclinable.
No. 4 Consolidated inclinable.
No. 5 Long & Allstatter single end punch, 5/8" in 5/8", 4" throat.
No. 32 Michigan solid back.

No. 93 Consolidated, solid back.
Style E Rock River single end punch, arch. jaw, 10" throat, capacity 1" in 1".

SHAPERS AND PLANERS

20" Rockford, b. g. shaper.
20" Kelly, b. g. shaper.
26"x 6' Pond planer.

30"x 8' Ohio planer.
30"x 10' Pond planer.
36"x 15' Betts planer, 2 heads.

GRINDERS

6"x 32" Norton plain.
14"x 72" Norton plain.
16"x 96" Landis plain.

16"x 48" Landis, crank pin.
29"x 96" Landis, crankshaft.
P. & W. vertical surface.

Extra Selected

- 2½" Gridley Multiple Spindle Automatic, serial 9186.
- 5½" Cleveland Automatic Screw Machine, model A, serial 28076, most excellent condition.
- No. 513 Baker Heavy Duty Drill, capacity 5" in steel, arranged for motor drive.
- Type NC Kobert dual-head Electric Riveter, for ½" to ¾" rivets. Excellent condition.
- No. 3 J. N. LaPointe double spindle Broaching Machine.
- 15" Dill Slotter, nearly new, with countershaft.

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LATHES

18" x 8' Morris Q. C., New.
18" x 10' Morris Q. C., New.
22" x 12' Morris Q. C., New.
32" x 17' Pond Single B. C., Cone.
42" x 16' Niles, T. G., Cone.

SHAPERS & SLOTTERS

16" S. G. Stockbridge - Worcester,
New.
15" Bement Slotter 220 v., D. C.

RADIALS

4' Morris radial, new.
5' Niles Universal Gear Box.
6' Niles Universal, Motor.

BORING MACHINES

18" P. & W. Side Head Mill.
42" Niles B. & T. Mill.
44" Niles, with R. H. Turret Head,
220 v., D. C.
12' Niles Heavy Vertical B. & T.
Mill.

PLANERS

32" x 32" x 10' Niles, 2 Heads.
32" x 32" x 12' Pond, 2 Heads, Motor.
36" x 36" x 10' Pond, 3 Hds., Rev. Mtr.
36" x 36" x 12' Pond, 4 Hds., Rev. Mtr.
42" x 42" x 12' Niles, 4 Heads.
42" x 42" x 14' Pond, 4 Heads, Motor.
48" x 48" x 16' Pond, 4 Heads.
10' x 10' x 36' Betts, Motor, 4 Heads.

PUNCHES & SHEARS, AND

MISCELLANEOUS EQUIPMENT

Natco 16-spindle, No. 13 drill.
 $\frac{3}{8}$ " x $\frac{3}{8}$ " Cap. 12" Throat L. & A.
Horizontal Punch, arran. for Mtr.
185 lb. Motor Driven Air Hammer.
2" Cox Lever Grip Pipe Machine,
D. C. Motor.
DA2-Wilson, 220 v., D. C. Welder.

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Good Tools—Priced Right

DRILLS

No. 3 Baush High Speed Multiple Spindle Drill, 20"x40" rectangular head; ten spindles 1 1/4". Condition good.....	\$1000.
28" Barnes Sliding Head, tapping attach., comp. table. Condition good....	350.
(NEW) 26" Kern Sliding Head, back gear, power feed, tapping attach....	600.

GRINDERS

Wilmarth & Morman Twist Drill Grinder, motor drive, capacity 1/2" to 3 1/2". Condition good.....	\$175.
No. 1 Cincinnati Cutter and Tool Grinder.....	150.
No. 15 Bryant Semi-Automatic Hole Grinder. Like new.....	900.
10"x30" Fraser Self-Contained Universal. Condition fair.....	375.
No. 190 Greenfield Universal Cutter and Tool. Condition good.....	150.
No. 5 Oliver Twist Drill, motor drive, capacity 1/4" to 2 3/4". Like new....	450.
6"x32" Norton Plain Grinder. Condition good.....	400.
No. 10 Brown & Sharpe Plain Grinder, 6"x20". Condition good.....	125.
No. 11 Lumden Plain Ball Bearing, with cup wheel. New.....	275.

MILLERS

No. 6 Whitney Hand Miller. Condition good.....	\$150.
No. 10 Pratt & Whitney Hand Miller.....	150.
No. 3H LeBlond Plain Cone Type Miller. Like new.....	1300.
No. 0 Brown & Sharpe Plain Miller. Condition good.....	300.
No. 0 1/2 LeBlond Plain Miller.....	400.
No. 33 Kempamith—Lincoln Type—Miller.....	750.
No. 32 Kempamith Miller. Condition good.....	350.
Taft-Pierce Thread Miller.....	400.
Briggs Type A Miller, 16" table feed. Condition good.....	250.
No. 2 Knight Vertical Miller.....	600.

SAWS

No. 15 Lea-Simplex Type BB Cold Saw. Condition very good.....	\$600.
20" Silver Belt Drive Band Saw.....	65.
6" Napier Metal Band Saw.....	150.

TURRET LATHES AND SCREW MACHINES

No. 3 Warner & Swasey Plain Head Screw Machine.....	\$ 175.
Defiance Hand Screw Machine 16" swing, pan bed, friction head.....	350.
No. 6 Brown & Sharpe Turret Screw Mche. with roll fd. Condition good.....	800.
No. 2 Warner & Swasey Hollow Hex. Srew Machine.....	400.
1"x15" Pratt & Whitney Turret Screw Machine. Condition good.....	500.
No. 3 Foster Turret Lathe. Condition good.....	300.
No. 3 Foster Turret Lathe with auto. Chuck. Condition good.....	300.

MISCELLANEOUS

LaPointe (Hudson Mass.) Broaching Machine, with 2" diameter screw 48" long. Condition good.....	\$300.
4" Hurlburt-Rogers Cone Type Cutting-Off Mche. Condition very good.....	250.
No. 425 Standard Fuel and Engineering Company High Speed Furnace, with heating space 9"x14".....	75.
24" G. & E. Gear Hobber. Cap. 24"x10"x5", 6-pitch. Condition fair.....	325.
18" Gleason Bevel Gear Generator. Condition good.....	800.
No. 6 Fellows Gear Shaper.....	500.
No. 5 Williams-White Drop Hammer. Weight of ram 600 lb.....	350.
No. 1 Gray Sheet Metal Cutter, cap. 3/16"; depth of throat 34". Like new.....	400.
No. 1 National Acme Screw Slotter. Condition good.....	125.
12" Rochester Tooth Rounder.....	300.

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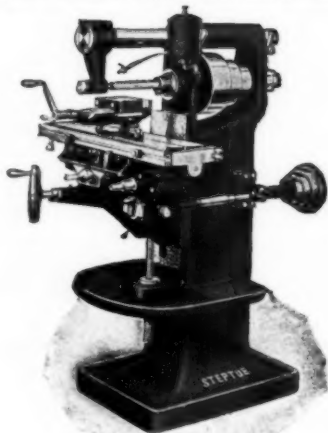
The No. 0 Plain Miller, with power feed and back-gear.

The No. 0 Plain Miller, with power feed, without back-gear.

The No. 0 Hand Miller, screw elevation to knee.

The No. 0 Hand Miller, lever elevation to knee.

The regular attachments supplied with these machines.



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Artisan Mfg. Co., Box 49, Station N
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We have decided to rent our immense warehouse and occupy a smaller one. Therefore we offer at

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Our entire stock of Rebuilt and Guaranteed Machine Tools, Contractors', Power and Electrical Equipment in order to save the cost of moving and to reduce our stock to the size suitable for the smaller warehouse.

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- 13"x21"x8' Star Gap Lathe.
- 28" Gisholt Turret Lathe, belt driven.
- 3" & 4" Horiz. Boring Mills, (2).
- 42" Bullard Rapid Production Vertical Boring Mill, 220 Volt, D. C., M. Drive, turret head on rail.
- 42" Bullard Vertical Boring Mills.
- 37" Baush Vertical Boring Mill.

MILLERS AND GRINDERS

- No. 5B Brown & S. Plain Miller.
- No. 4 Cincinnati Plain Miller.
- No. 3 Kemp Smith Plain Miller.
- No. 3 Becker Vertical Miller.
- No. 2½ LeBlond Plain, cone drive.
- No. 2 Kemp Smith Plain Miller.
- No. 1 Cleveland Plain, S. P. D.
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- 12"x72" Norton Cylindrical Grinder.
- 4"x30" P. & W. Cylindrical Grinder.

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- 6' Bickford Plain Radial.
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- Barr 6-Spindle Sensitive Drill.
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- 24" Weigel Sliding Head Drill.

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- 20" Smith & M. Crank Shaper, new.
- 10" & 18" Betts Slotters (2).
- 24"x24"x10' Chandler Planer.
- 30"x30"x 8' Pond Planer, 2 heads.
- 36"x30"x16' Whitcomb-B. Planer.
- 36"x36"x10' Pond Planer, 4 heads.
- 36"x36"x12' Pond Planer, 2 heads.

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- 1100 lb. N. B. P. Forging.
- 2000 lb. Bell Steam Forging.
- 200 lb. United Upright Power.
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- 36" Cleveland Style EF, 1¼"x1".
- 21" Hiles & Jones S. E., 1"x¾".

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- Allen, 72" reach, 12" gap, 10" cyl.
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- Allen Compression (Angle) lever rive., 11½" dia. cyl., 9½" reach, 14" gap.

MISCELLANEOUS

- 24" Brown & Sharpe Gear Cutter.
- No. 3B LaPointe Broaching Machine.
- 4"—6"—8" and 12" Pipe Machines.
- P. & W. Flywheel Trimming Press.

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MACHINERY CO.

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Established 1900

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Turret Lathe, No. 4 Warner & Swasey,
geared friction head.
Square Shear, 10' Bertsch, 14 ga. cap.
Shaper, 20" Rockford, back geared.
Screw Mach., No. 2 B. & O., geared
head with motor, capacity 1".
Screw Mach., No. 2 B. & S., auto., m. d.
Punch, S. E., 48" throat Rock River,
arch. jaw, motor dr., cap. 1 1/2" x 1".
Press, S. S., No. 37 1/2 Bliss plain.
Press, No. 34 solid back geared.
Press, No. 21 B. Blim, o. b. i., geared.
Planer, 72" x 12' Gray, two heads.
Planer, 36" x 32" x 12' Betts, 1 head.
Miller, vert., 40" Hilles & Jones.
Miller, thread, 6" x 80" P. & W.

Lathe, 36" x 17' American, geared hd.,
arranged for geared motor drive,
mechanical apron control.
Hammer, steam, 1100 lb. Niles-B.-P.,
single frame.
Grinder, 5" x 16" modern cylinder.
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Drill, Radial No. 3 6' Bickford plain,
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Drill, Multiple, No. 12 Natco, with
10" x 16" rectangular head.
Drill, Heavy Duty, No. 3-D Minster,
capacity 3 3/4".
Drill, Heavy Duty, No. 2 Baker, ca-
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Drill, all-gear gang, 24"-2 spindle
Barnes, with geared thread leading
feed for 1 1/2" pitch tap, auto. reverse
for tapping, 99 per cent new.

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2—8"x60" Low-Swing Lathes, with tailstock, single carriage, each.....	500.
1—Reed Center Drive, Double-end Motor driven Axle Turning Lathe, 3" hole thru spindle and 3" hole thru loading tailstock, price.....	1500.

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SIDNEY, OHIO

New and Good as New Machine Tools

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No. 1 Norton universal grinder.

No. 3 Wilmarth & Morman surface.

No. 23 Baxter D. Whitney cyl., new,
mfgs. price, \$2750., our price \$750.

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\$67.50, our price \$50. ea. (2).

14" Builders double end, new, mfgs.
price \$131., our price \$95.

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price \$165.25, our price \$125.

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12"x4" Hendey geared head, motor
driven, serial No. 16888.

14"x6" Hendey tie bar, taper attach.

16"x10" P. & W. grd. hd., motor dr.

18"x8" Prentice geared hd., motor dr.,
taper attachment and pan bed.

18"x10" Prentice geared head, motor
driven, taper attach. and pan bed.

18"x12" Lodge & Shipley q. c., taper
attach., draw-in chuck, pan bed.

20"x8" Monarch, d. b. g., q. c.

26"x10" Bridgeford, d. b. g., q. c., t. att.

MILLERS

Model B Becker vert., single pulley dr.

No. 2 Cincinnati plain.

No. 3 Cincinnati plain.

No. 4 Cincinnati universal.

PIPE MACHINES

2" No. 300-A Oster, belt driven.

4" No. 304-A Oster, belt driven.

4" No. 304-B Oster, motor driven.

6" Eaton-Cole & Burnham, belt dr.

PLANERS AND SHAPERS

26"x26"x10" Gray, 1 head.

36"x36"x 8" Cincinnati, 2 heads.

7" Rhodes and 16" Kelly, cone drive.

20" Columbia, b. g., cone drive.

24" Kelly, b. g., cone drive.

24" Gould & E., b. g., cone drive.

Delta Equipment Co., 148 N. 3rd Street,
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500 ITEMS IN STOCK

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- 1—No. 2 B S Milwaukee plain, double over arm, nearly new.
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- 1—No. 2 Cincinnati pl., cone. dr.
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- 1—Allen sgle., spdl, high speed.
- 6—No. 25 Foote-Burt heavy duty drill presses, 1 with comp. tbl.
- 1—No. 2 Avey 2 sp., high speed.
- 3—Class K Henry & Wright 3-spindle, high speed.
- 2—Allen 2-spindle high speed.

PLANERS and SHAPERS

- 1—30"x30"x16" Gray planer, 3 heads, spiral gear drive.
- 1—20"x20"x5" Whitcomb planer, second belt drive, single head.

- 1—21" Smith & M. b. g. shaper.
- 1—16" Gould & E. shaper, bk. gr.
- 1—24" Hendey friction shaper.
- 1—16" Cincinnati bk. grd. shaper.
- 2—16" Whipp bk. geared shapers (brand new).

MISCELLANEOUS

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- 1—No. 12 B. & S. plain grinder, capacity 8"x36", late type.
- 1—6"x80" P. & W. thread miller.
- No. 10 Brown & Sharpe plain grinder, capacity 6"x20".
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- 1—No. 1 Brown & Sharpe Wire Feed Screw Machine.

We have 500 other machines in stock. If you do not see it listed, send us your inquiry.

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Slightly Used and Rebuilt Tools At Bargain Prices

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- 1—12"x5" Hendey Cone Head Tie Bar Quick Change Gear Lathe, with oil pan, compound rest, standard equipment, rebuilt.
- 1—14"x6" Hendey Cone Type Tie Bar Head, Q. C. Lathe, c. r., taper att. rebuilt.
- 1—14"x6" Mulliner-Edlund, Q. C. G. Lathe, oil pan, c. r., taper, complete, rebuilt.
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EXCLUSIVELY

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- 1—No. 27 Bliss, 1000 tons, K. J.
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- 1—No. 56 Toledo, geared.
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- Rochester Tooth Rounder.

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- No. 3 B. & S. Cutter & Tool.
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- LATHES:** Six 36"x16' Niles-Bement-Pond Screw Cutting Lathes, quick change gears, geared head with motor mounted on head.
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One No. 5A Potter & Johnston Automatic, high serial.
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Two 42" Cincinnati Upright Drills, B. G. & P. F., gear box drive.
One 5-spindle Allen High Speed Drill.
- GRINDERS:** Two 6"x30" Norton Plain Grinders.
One 14"x72" Norton Plain Grinders.
One No. 2 Cincinnati Plain Grinder.
- SHAPERS:** Two 26" Smith & Mills Shapers, B. G.
One 24" Potter & Johnston Shaper, Universal Table.
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One 8' Ohl Power Squaring Shear, capacity 16 gauge.
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One 14" P. & W. Vert. Surf. Grinder with mag. chk.
One No. 2 Brown & Sharpe Vertical Miller.
Other High Grade Equipment.

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Broaching Machine, No. 3 LaPointe.
Drill, Moline No. 6-D, 10' rail; 26 No. 14 style D hds., 99% new, \$1500.
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Drill, American 4' radial, motor drive.
Drill, Drees 6' univ. radial, motor dr.
Drill, Pecorp model F, ball bearing.
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Grinder, Bath No. 2 universal.
Grinder, Landis 10"x72" plain.
Grinder, LeBlond No. 1 universal.
Lathe, Bradford 18"x8".
Lathe, Seneca Falls 15"x6".
Lathe, Porter-Cable 9"x20".
Lathe, American 14"x6".
Lathe, Houston, Stanwood & Gamble 30"x16".
Lathe, American 24"x12" m. p.
Milling Machine, LeBlond No. 0 1/2.
Milling Machine, Becker No. 5C.
Milling Mche., B. & S. No. 3 vertical.
Milling Machine, National No. 0.
Milling Machine, Van Norman No. 1.
Planer, Hendey 16"x4".
Punch & Shear, Wain No. 3 univ.
Punch & Shear, Wain No. 2 univ.
Saw, Cordesman 36", band.
Saw, Cochrane-Bly No. 4B, cold.
Shaper, Pratt & Whitney 16".
Threading Machine, Webster & Perks 4-spindle.

The Seifreath-Elstad Machinery Company
Storeroom—Dayton, Ohio
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Every Tool Guaranteed

3—No. 2½ Toledo Punch Presses, o. b. i., each.....	\$275.
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1—1-ton Sprague Electric Hoist, 220 volts, a. c.	250.
1—18"x8" Star Lathe, complete.....	100.
1—10x24 Landis Grinder, Universal, like new, complete.....	250.
1—48"x48"x10" G. A. Gray Planer, 2 heads on rail.....	800.
1—No. 8 style a. c., Pangborn Sand Blast Machine, complete with blower, 15 h. p., a. c. motor, sand sifter.....	
6—Style "C" Shore Scleroscopes, complete, each.....	125.
4—Style "D" Shore Scleroscope, complete, each.....	185.
1—4500 Kilogram Brinell Testing Machine, complete.....	200.
40—Geometric Die Heads, and Collapsible Taps, slightly used, all sizes, each.....	\$10.00 to 25.

A large assortment of High Speed Drills and Cutters. Brand New at REDUCED PRICES.

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Bending Rolls, 10"x½" Hilles & Jones, rebuilt.

Boring Mill, 36" Bullard, 1 rail head, arranged for d. c. motor drive.

Boring Mills, 50" Bickford, 42" Gisholt, Niles and Rockford horizontal.

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Lathes, 5 new 18"x8" Hollingworth, quick change gear lathes at bargain prices; send for descriptive circulars.

Lathes, from 12" swing up to 48" swing, 5' to 30' length of beds.

Milling Machines, B. & S. Nos. 2-B Heavy and 3-B Heavy, also No. 3 B. & S. Vertical, LeBlond, Oesterlein and Kearney & Trecker machines.

Planers, 33"x10" Cincinnati, 2 heads; 30"x30"x16" Gray, 2 heads; 36"x12" Woodward & Powell; 24"x6" Pond.

Presses, 12—No. 30 Long & Allstatter Inclinable, 2200 lbs., in original crates.

Willard Inclinables 3-A and 6-A, 50 Ton Lucas Forcing Press.

Shapers, Radials Drills, Keyseaters, Etc.

We Have Just Purchased the Entire Plant of Machinery of

MIDDLETOWN MACHINE CO.,

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Lot embraces many choice tools, such as American and Boye & Emmes Lathes, 6 Willard Inclinable Power Presses, Kokomo and Avey High Speed Drills, Brown & Sharpe and Kearney & Trecker Milling Mchs., Cincinnati Shaper, 4" Fostick late type Radial, ¾" to 2½" Gridley Automatics, Acme and Warner & Swasey Machines, No. 31 LUCAS Horizontal Boring Mill, etc.

*Will gladly arrange for inspection of these tools or
send you details by mail upon request.*

Norton-Broadway Machinery Co.,

Cincinnati, Ohio

WAYNE Greater Values

11"x 7' Myers Lathe.....	\$ 125.
14"x 6' American, q. c., 4-step cone.....	275.
14"x 6' Sidney Lathe, q. c., 3-step cone, double back gear.....	250.
16"x 9' Chard Lathe, q. c., 3-step cone, double back gear.....	400.
16"x 8' Hendey Lathe, q. c., taper, yoke head.....	750.
16"x 8' National Lathe, q. c., 3-step cone.....	350.
20"x12' Hendey Lathe, q. c., 4-step cone, taper, yoke head.....	1200.
24"x12' Carroll-Jamieson Lathe, semi-quick change, 3-step cone.....	400.
24"x10' Boye & Emmes Lathe, q. c., 3-step cone.....	850.
26"x12' Lodge & Davis Lathe, loose change, 5-step cone, taper.....	500.
3' Fosdick Radial, cone pulley.....	350.
3' Dreses Radial, cone pulley.....	400.
5' American, triple geared, single pulley drive.....	1500.
No. 2 Brown & Sharpe Plain Miller, cone.....	500.
No. 3-B Heavy Brown & Sharpe single pulley.....	1100.
No. 3 Brown & Sharpe Universal.....	1000.
No. 3 Brown & Sharpe Vertical, single pulley.....	850.
16" Lodge & Davis Plain Crank Shaper.....	175.
16" Hollingworth Geared Crank Shaper.....	450.
16" Ohio Heavy Geared Crank Shaper.....	475.
24" Jackson Geared Crank Shaper.....	700.

WAYNE MACHINERY CO., Fort Wayne, Indiana

SPECIAL! HAMMERS.

5000 lbs. board drop Chambersburg.
1500 lbs. steam drop Erie.
1000 lbs. steam drop Erie.
1500 lbs. straight frame steam Morgan.

1000 lbs. angle frame steam Bement-M.
800 lbs. angle frame steam Bement-M.
800 lbs. angle frame steam Erie.
600 lbs. angle frame steam Niles-B.

No. 60 Quickwork Rotary Shear.
No. 10A Quickwork Rotary Shear.
54" Throat "Rock River" single end
Punch, arch jaw.
No. 3A Royersford double end
Punch and Shear.
No. 7 Long & Allstatter double end
Punch.
18" Newton Slotter, motor driven.
20" Columbia b. g. Shaper.
22"x38"x12'-17' extension Har-
rington Gap Lathe.
18"x9' Chard q. c. g. Lathe.
16"x9' Chard q. c. g. Lathe.
No. 1½ Cincinnati Plain Miller.

No. 3 Owens Universal Miller.
16-Spindle Baush Drill.
12-Spindle Baush Drill.
36"x36"x16' Flatther 2-hds. Planer.
36"x36"x10' Cincinnati 1-hd. Planer.
36"x36"x9' 1" Woodward-Powell 4-
head Planer.
No. 5 Bliss Geared Press.
No. 4 Niagara Flywheel Press.
3½"x40" Greenlee turret.
2½" Cleveland Model A Automatic.
2½"x26" Cincinnati Acme Turret.
28" Superior S. H. Drill.
21½" Kokomo S. H. Drill, with a. c.
motor.

L. F. Seyfert's Sons, Inc.
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Immense Modern Plant Being Liquidated By Us In Jersey City

72x72x20' NILES-BEMENT-POND Planer, 4-head, motor drive, compl.
48x48x14' AMERICAN, 2-head, belt drive.
72"x13" BROWN & SHARPE Gear Cutter, s. p. d.
6' BICKFORD Radial Drill, single pulley or motor drive.
61" BULLARD Vertical Boring Mill, 2 heads.
18" NILES-BEMENT-POND SLOTTER, rotary table.
18x96" BROWN & SHARPE heavy duty Grinder.
No. 5 BROWN & SHARPE Plain Miller, table 14x52".
28" CINCINNATI all-g geared sliding head Drill Press.
No. 1B FOSTER Universal Turret Lathe, geared head, s. p. d.
25x10' R. K. LeBlond Engine Lathe, quick change.
24x12' AMERICAN TOOL WORKS Lathe, quick change.
16" COX Pipe Threading Machine, dies 8-16", motor drive.
Landis 1½" Bolt Cutter, lead screw cutting attachment.

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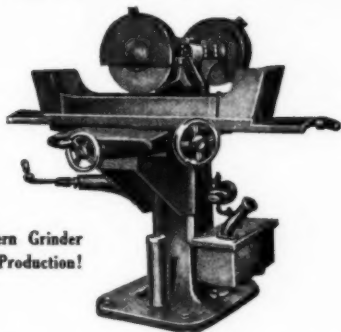
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